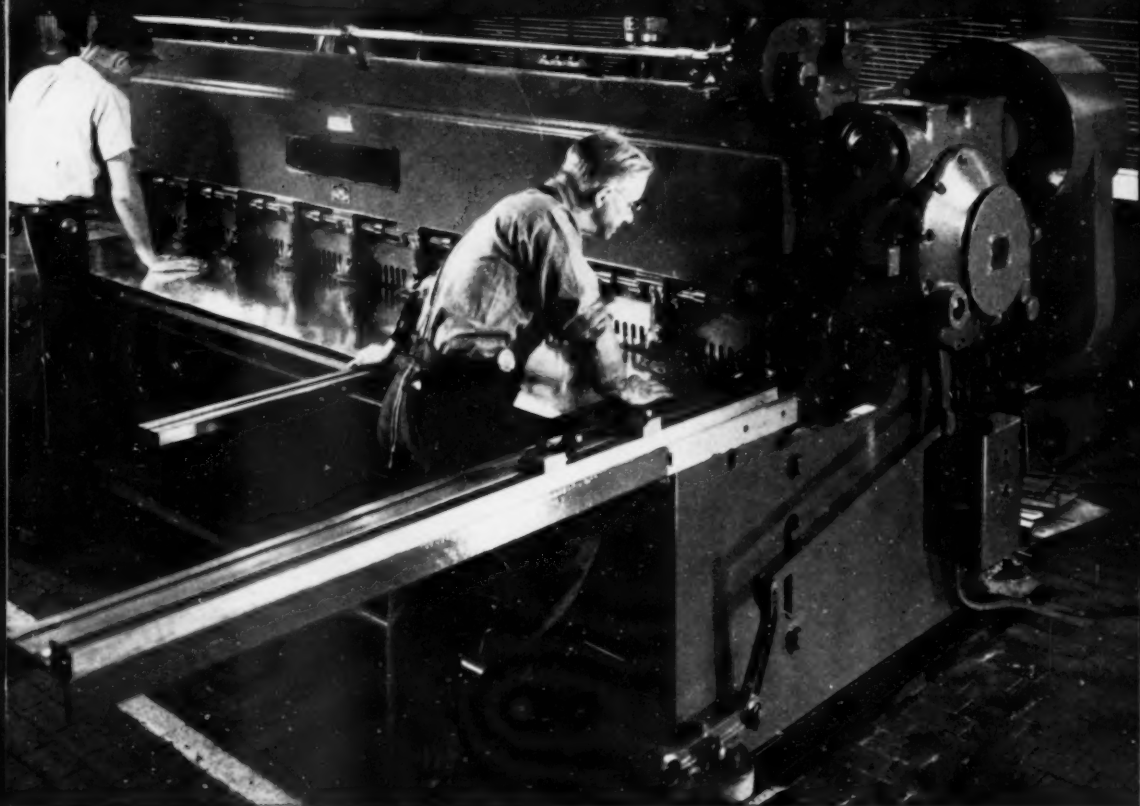


# M ARTISAN



• **UP TO DATE** sheet metal shops use the latest in production machinery. This heavy shear is typical of the equipment used in the shop of an American Artisan reader. Page 62.

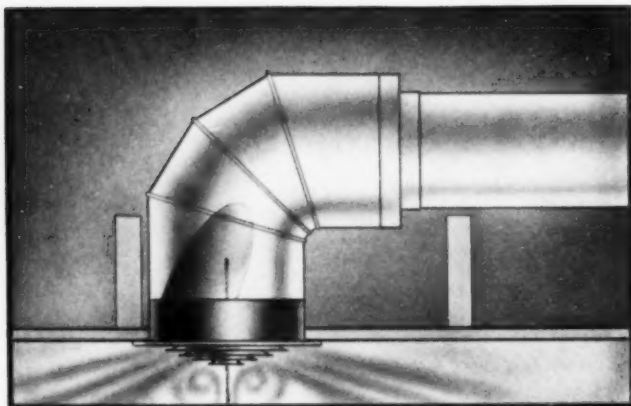
• **EFFICIENCY OF** residential heating systems can be improved by using Prof. Konzo's analysis of Degree Day Methods. Page 40.

• **EVERY CONTRACTOR** faces the problem of leaving tools behind when the job is finished. Here is a simple solution. Page 62.

• **THE CLASSIFIED** telephone directory is proving to be an effective advertising medium for a progressive contractor. Page 50.

• **WHEN IT'S TIME** to see your banker, know the answers in advance if you want him to grant your request. Page 58.

**FOR A MORE EFFICIENT AND SATISFACTORY  
OVERHEAD HEATING OR COOLING SYSTEM USE  
AIR CONTROL CEILING DIFFUSERS & ACCESSORIES**



Air Control Ceiling Diffusers are designed for use on any heating or cooling system where the air is discharged thru the ceiling into the room.

These Diffusers are built with a series of AIR-FLOW Rings that discharge the air slightly downward from the ceiling with a minimum of resistance. They give you perfect air distribution without drafts.

Air Control Diffusers differ from a Register in that the air is discharged in a series of concentric jets that result in a rapid mixing of the warm (or cold) air with the room air.

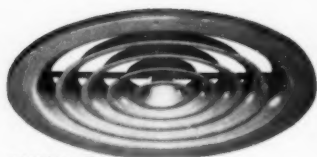
They are attractive in appearance and blend with any room interior. You will find them surprisingly low in cost. Available in two styles—Flush and Stepped-Down type. Produced in a range of sizes to meet all requirements for residential, small commercial or industrial applications.

**For customer satisfaction and trouble-free operation use Air Control Diffusers and Accessories on your next overhead installation.**



Write for your free copy of the Air Control 52-ac Catalog with information and engineering data on the complete Air Control Line of Registers, Floor Faces, Ventilators, etc.

**AIR CONTROL PRODUCTS, Inc.**  
COOPERSVILLE MICHIGAN



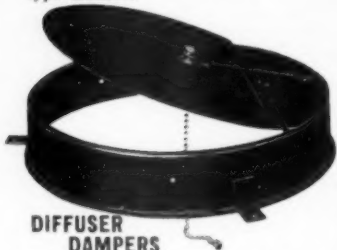
**FLUSH TYPE**

Ideal for installations where Diffuser must be flush with ceiling. Rings conceal opening. Finished in Beige-Satin Prime Coat and equipped with sponge rubber gaskets.



**S. D. TYPE**

Step-down ring construction gives approximately 30% more free area than flush type. Also delivers the air in more downward angle than the flush type diffuser.



**DIFFUSER  
DAMPERS**

These Dampers are completely assembled units and can be installed in a matter of minutes. Operated by a bead chain thru center of Diffuser.



**INSTALLATION RINGS**

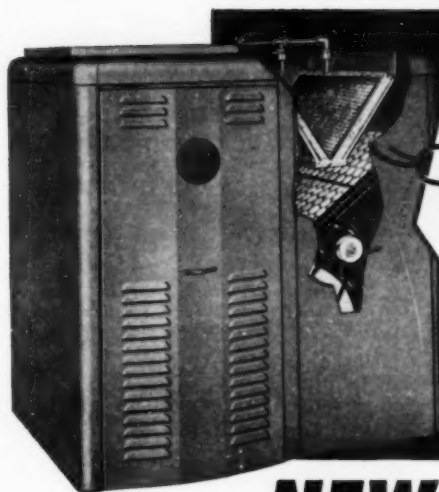
For easier and better installation of Diffuser use these installation rings. They form a solid firm base for fastening the Diffuser and they help hold the pipe in place.



**DROP RINGS**

Built for installation where it is desirable to drop the Diffusers down away from the ceiling. 2½" deep, with rubber gasket for tight seal to ceiling.





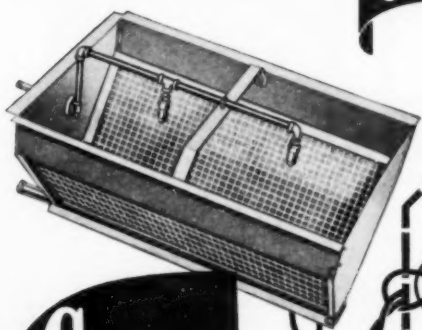
## **NEW** Century Lo-boys with **CONTROLLABLE HUMIDIFIER, AIR WASHER AND PURIFIER**

Enthusiastic buyers increase Century dealers' profits!

Like all heating men, you realize the true facts about humidified heat. You know humidifiers are unsatisfactory unless they can be accurately regulated to compensate for weather changes plus differences in climate and home construction. You also know how easy and profitable it would be to sell a heating line offering built-in humidity that can be controlled to the exact degree desired.

Only Century offers this important selling advantage. It's a sales-closing exclusive for Century dealers. Century dealers proudly tell their customers, "YOU—not the manufacturer—determine the exact degree of humidity for your home. A simple humidistat, placed by your thermostat, permits accurate humidity control and makes your home a more comfortable place to live. You enjoy this heating 'extra' only when you install Century." When you sell the progressive Century automatic heating line you profit from a line that's years ahead of current standards. It's a complete line too — 38 gas and oil units that sell and satisfy. Write today for the Century catalog and complete details. You'll be glad you did.

**CENTURY ENGINEERING CORP.,  
CEDAR RAPIDS, IOWA**



Advertised in Better Homes  
and Gardens and Small  
Homes Guide.

CENTURY ENGINEERING CORP., 416 Third St., Cedar Rapids, Iowa  
Please send me further details on your complete automatic  
heating line.

- |   |   |
|---|---|
| <input type="checkbox"/> Gas Hi-boys            | <input type="checkbox"/> Oil Hi-boys            |
| <input type="checkbox"/> Gas Lo-boys            | <input type="checkbox"/> Oil Lo-boys            |
| <input type="checkbox"/> Gas Counterflow        | <input type="checkbox"/> Oil Counterflow        |
| <input type="checkbox"/> Gas Conversion Burners | <input type="checkbox"/> Oil Conversion Burners |
| <input type="checkbox"/> Hot Water Boilers      |   |

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

.. PIONEERS IN AUTOMATIC HEATING FOR OVER 26 YEARS

# AMERICAN ARTISAN



Member—Audit Bureau of Circulations  
Member—Associated Business Publications



NEWS ROUND-UP	19
WASHINGTON LETTER	25
ARE THOSE DAYS GONE?	35
RESTAURANT MODERNIZATION WITH STAINLESS STEEL	36
MAKING OURSELVES ACCEPTABLE	39
DEGREE-DAY METHOD OF ESTIMATING FUEL CONSUMPTION	40
OHI TALKS SALES, ENGINEERING AND FUEL OILS	44
VENTILATING FOR SAFETY IN PHARMACEUTICAL RESEARCH LABORATORY	46
PRESTIGE VALUE OF AN ATTRACTIVE PLANT	48
DIRECTORY ADVERTISING PAYS OFF	50
MINIATURE DUCT SYSTEM WINS APPRENTICE TRAINING AWARD	51
RECTANGULAR TO ROUND ANGULAR OFFSET FITTING	52
COST CONTROL PROBLEMS SOLVED BY JOB TICKETS	54
FUNDAMENTALS OF SHEET METAL PRACTICE	56
NEED A LOAN? HERE'S HOW	58
SOLVING THE LOST TOOL PROBLEM	62
BAND MACHINE FACILITATES SHAPING LARGE METAL SHEETS	64

## DEPARTMENTS

THE EDITOR'S NOTEBOOK	6
ASSOCIATION ACTIVITIES	89
CONVENTION REPORTS	
THE OHIO ASSOCIATION	92
THE PENNSYLVANIA ASSOCIATION	96
EQUIPMENT DEVELOPMENTS	100
NEW LITERATURE	144
INDUSTRY ITEMS	152

RESIDENTIAL  
AIR CONDITIONING  
WARM AIR HEATING  
SHEET METAL CONTRACTING

Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals"

## EDITOR

CLYDE M. BARNES

## ASSOCIATE EDITOR

H. LOUIS PURDY

## ADVERTISING STAFF

WALLACE J. OSBORN  
ROBERT J. OSBORN  
New York City  
Murray Hill 9-8293

ROBERT A. JACK  
Cleveland  
EVergreen-2-1840

JAMES D. THOMAS  
GEORGE C. CUTLER  
Chicago  
STate 2-6916

R. PAYNE WETTSTEIN  
Los Angeles—DUckirk 8-2286  
San Francisco—YUkon 6-2522  
Portland—ATwater 4107

Published monthly by Keeney Publishing Company, 6 N. Michigan Ave., Chicago 2, Ill., U.S.A. Copyright 1952 by Keeney Publishing Company.

Publisher—FRANK P. KEENEY  
Manager—CHARLES E. PRICE  
Production Manager—L. A. DOYLE  
Circulation Director—FRANK S. EASTER

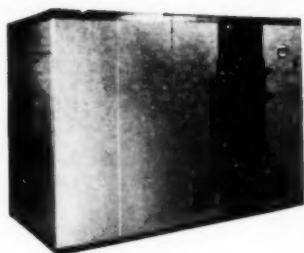
Yearly Subscription Price—U.S. and possessions, \$3.00; Canada, Cuba, Mexico, South America, Central America, \$4.00; Others \$6.00. Single copies, U.S. and possessions, \$35. Back numbers, \$60. January, 1952, Directory Issue, \$1.50 per copy. *Change in Address:* Report new and old address to publisher and local post office; deadline 23rd-25th of preceding month. Entered as second-class matter, July 29, 1932, at the post office at Chicago, Illinois, under the Act of March 3, 1879. Additional entry at Mendota, Illinois.

Founded 1864

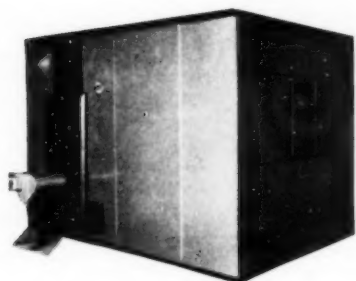
MAY 1952

Volume 89, No. 5

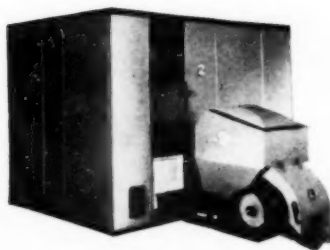
AMERICAN ARTISAN, MAY, 1952



CFB HAND FIRED



GFB GAS FIRED



CFB STOKER FIRED

IN SIZES 300,000 to 1,000,000 B.T.U. OUTPUT

For complete information see your warm  
air wholesaler or **WRITE DIRECT TO:**

*Syncromatic Corporation*  
WATERTOWN, WISCONSIN

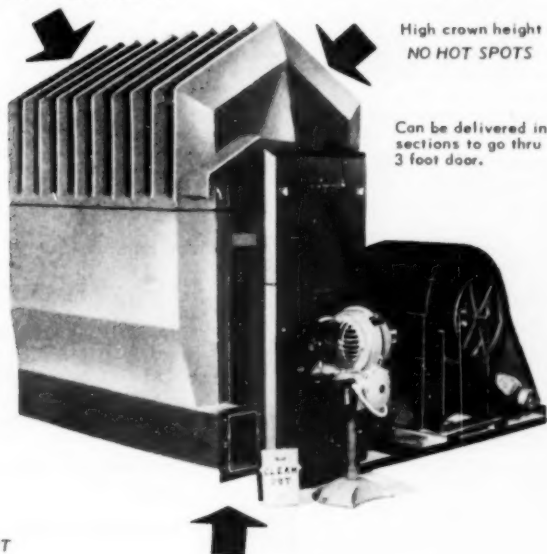
# HI-CAP

**HIGH - CAPACITY**  
*and*  
**HIGH - EFFICIENCY**  
**USING ALL FUELS**

*Famous patented counterflow  
design for maximum efficiency  
in heat transfer*



Welded inside and out



High crown height  
NO HOT SPOTS

Can be delivered in  
sections to go thru  
3 foot door.

Large fly ash traps easily  
accessible (Front and Rear)

*the editor's  
notebook*

#### FPC Severs Application of Tennessee Utility

Washington, D. C. — The Federal Power Commission has severed the application of East Tennessee Natural Gas Co., Knoxville, from the consolidated proceedings involving several other applications relating to the proposal of Tennessee Gas Transmission Co., Houston, Tex., to expand the delivery capacity of its natural gas transmission system.

The action was requested on April 3 by the Texas firm, and other participants in the proceedings took no position on the motion. The request was further made that the intermediate decision procedure be waived on all applications except East Tennessee's. Since the motion, agreed to by all parties, was not denied by the Commission within 10 days, it is deemed to have been granted in accordance with FPC's Rules of Practice and Procedure. This means that the case will be decided directly by FPC without the filing of an intermediate examiner.

#### Urge Uniform Release Permits for House Heating

The adoption of a uniform system of releasing permits for gas house heating by public utilities was recently recommended by Frank J. Nunlist, Jr., in a speech before the annual meeting of the Metropolitan Gas Heating and Air Conditioning Council in New York.

"Nothing can be more detrimental to the house-heating industry than to give the green light to dealers and a few months later advertise that no more gas heating can be installed because of a shortage of gas," Nunlist stated.

The speaker, general sales

## ESPECIALLY DESIGNED FOR GAS OR OIL-FIRED HEATING PLANTS

### FOR GREATER PROTECTION

Provides greatest protection to old or new masonry chimneys from combustion gases and condensation. Quality built Vitroliner extends chimney life. — corrects defective lining, — smoke back, leaky brick joints and poor draft.

VITROLINER increases the efficiency of the chimney by creating better draft and greater heating plant efficiency. Installs easily and quickly in a few hours by bolting sections together and lowering by rope as illustrated.

VITROLINER is a pioneer in the field of lining chimneys — with over twenty years of engineering development and research. Manufactured from heavy gauge, high quality iron, coated inside and out, with special acid-resisting porcelain. Many gas companies and leading manufacturers of oil and coal burning equipment recommend VITROLINER at the time of installation.

### FEATURES

- ELIMINATES FIRE HAZARDS
- CREATES BETTER DRAFT
- REDUCES FUEL CONSUMPTION
- PREVENTS CONDENSATION DAMAGE
- ASSURES LONGER LIFE
- AVAILABLE IN ALL SIZES

PROVEN IN SERVICE SINCE 1929

Write us today for prices and dealer information.  
Ask about our insulated flues.

FOR FURTHER INFORMATION, WRITE TO  
**CONDENSATION ENGINEERING CORPORATION**  
1511 W. POTOMAC AVE., CHICAGO 31, ILL.

*the editor's  
notebook*

manager of L. J. Mueller Furnace Co., Milwaukee, suggested that the public utilities adopt a system used in several cities where a release of installation permits for gas heating equipment is scheduled at periodic intervals.

Nunlist presented ten recommendations for the general improvement of the gas house heating field, suggesting that the utility companies instigate the sale and promotion of gas house heating.

#### Oil Producers Petition for Price Increase

A group of Pennsylvania crude oil producers recently met in Washington with OPS officials requesting an increase in the price of their product. Stating that crude oil production is diminishing, due to rising costs of drilling new wells, industry representatives urge OPS to raise Pennsylvania crude oil prices to a level which would encourage increased production from oil wells throughout the area.

The request is under consideration by OPS officials at present. Producers stated that the situation would be discussed with Petroleum Administration for Defense from a supply standpoint. Group spokesmen said, however, that the crude oil producers would probably petition for a price increase by requesting an amendment to CPR 32 under OPS's protest procedure.

#### Warm Air Furnace Shipments

The National Warm Air Heating and Air Conditioning Association recently published a report comparing the total of centrally-fired warm air furnace shipments for 1951

**LOW COST, DEPENDABLE HEATING  
IS NO PROBLEM WHEN YOU SELL THE**

## **NEW WALL - O - MATIC**

*Monogram*

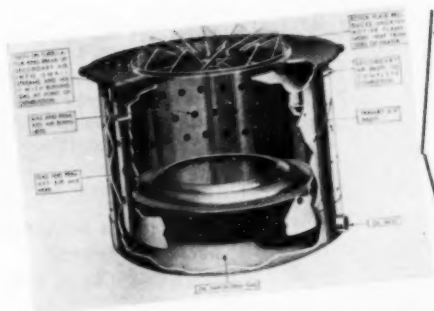
## **OIL WALL FURNACE**

The tremendous small homes market is a lucrative one for heating contractors. It can be made even more so by the proper selection and promotion of a well designed, efficient heating unit, and we're sure we have the answer in the new Wall-O-Matic MONOGRAM Oil Wall Furnace.

The MONOGRAM is a modern, packaged unit which allows YOU to economize on installation time, and your customer on space. No more bulky, unsightly heating plants for him . . . just a handsome, compact unit that extends only 3 1/2" into his living room.

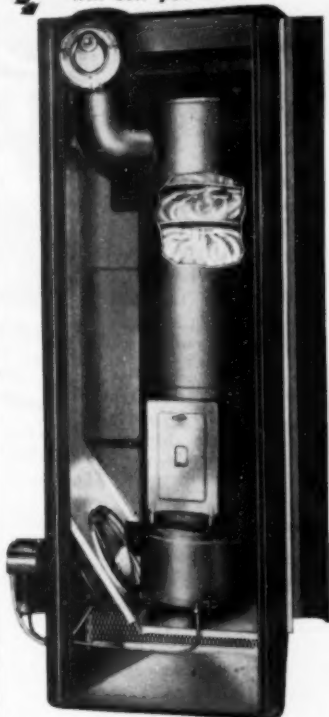
With the Wall-O-Matic MONOGRAM you can offer your prospects a complete furnace installation at space heater prices because there's no need for duct work and since it is listed by the UL, an inexpensive pre-fab chimney may be used.

You just can't beat a deal like this . . . besides, it's powered by the exclusive MONOGRAM burner rated at 65,000 btu which has been in use since 1937. Better write us today for more details.



**QUINCY STOVE MANUFACTURING COMPANY  
QUINCY, ILLINOIS**

**The "inside" story  
will suit you . . .**



**. . . and the outside  
will suit your customers!**



**THIS IS THE  
ANSWER . . . THE  
POWER-AIR  
BURNER**

**THAT PRODUCES  
MORE HEAT AT  
LESS COST**



*the editor's notebook*

against those in 1950, based on Bureau of Census figures.

The tabulation below shows total shipments of all types of warm-air furnaces, both gravity and forced air, steel and cast iron, according to types of fuels for the two years:

	1950	1951
Coal	138,367	146,748
Oil	558,039	326,862
Gas	597,924	389,907
Total	1,094,330	863,517

#### U. S. C. of C. Sees Improved Planning

In the past 50 years, the American work week has shrunk from 60 hours to 40 hours, yet production per man has increased five times. The U. S. Chamber of Commerce states that the reason is to be found in vastly improved labor saving machinery and in improved planning and management, as well as in better trained and more highly educated workmen.

#### DPA Approves Oil Expansion Program

An 18-month expansion program for the nation's petroleum industry has been approved by the Defense Production Administration. Beginning July 1, 1952, and extending through 1953, the proposed expansion calls for an increase of 750,000 barrels a day in refining capacity, bringing U. S. crude oil refining capacity up to 8 million barrels a day as of Dec. 31, 1953. A total of 80,000 wells, 25,000 in the last half of 1952, the balance in 1953, are scheduled for drilling. Construction of 19,700 miles of oil pipelines which will constitute a total pipeline mileage of 185,000 miles by the end



**ACCURATE, DEPENDABLE, WEATHERPROOF GAUGES**  
**Easy to install... Easy to read!**

Unaffected by specific gravity changes or variations, Sentry Remote Gauges accurately indicate liquid level at all times. Simplified mechanical operation eliminates unnecessary fittings, bulbs or levers for serviceman to tamper with as well as his need for access to building. Remote Gauge may also be combined with At-A-Glance Direct Gauge, shown below, for readings at both tank and remote location if desired. Non-corrosive, stainless steel and brass extension lines connect tank float with heavy-duty cast aluminum, weatherproof, thermometer type indicator — calibrated in fractions. Unconditionally guaranteed. Write for descriptive literature.

Type D-O and D-10 Gauge for basement tank installations with 2" and 1½" openings respectively.

Type D-U Gauge for underground tank installations. Fits 2" openings only.

**Sentry AT-A-GLANCE GAUGES**  
**For accurate DIRECT tank readings**

Fastest selling, most popular gauge in the industry. Simplified mechanism eliminates gears, cams, springs and magnets that wear out and cause trouble. Durable construction with patented assembly featuring printed breakable, fog-proof, heavy-duty double plastic domes with printed calibration scale between for clear, easy-to-see readability from any direction. Gauge is Underwriters' Listed and will withstand in excess of 70 lbs. air pressure per sq. inch. Entire unit is non-corrosive and guaranteed leakproof under pressure filling and against defective operation. Workman, ship and materials. Quick, simple to install even on partially filled tanks. Write for complete descriptive literature.

**KRUEGER Sentry GAUGES**  
GREEN BAY • WISCONSIN

*the editor's notebook*

of 1952 is another feature of the program.

A natural gas production and refining capacity of 131,000 barrels of natural gas liquids a day increase over the present figure by the end of 1953 is proposed, making a total gas production and refining capacity of 751,000 barrels a day by the end of that period.

Cost estimates of this expansion program, according to recent figures released by Washington observers total over \$7½ billion.

#### New England to Get Natural Gas

Boston, Mass.—New England utility companies are facing an excellent opportunity for rendering public service, according to Louis Ruthenburg, president of the Gas Appliance Manufacturers Association at the annual meeting of the group held here recently.

With natural gas about to be introduced into the New England area, a swing to gas house-heating, installation of gas appliances in the home, and extensive industrial application of gas may be anticipated.

According to Ruthenburg, such possibilities offer unprecedented opportunities, not alone for the distributors of the fuel but to utilities and appliance manufacturers as well.

#### Adelta Repeats Simplified "Course" by Request

Philadelphia, Pa. — Adelta Manufacturing Co., having received so many requests to repeat their "short course" in the design, estimating and installation of domestic winter air conditioning systems, has

Make fittings  
right on the job  
with...

**LOCKFORMER**

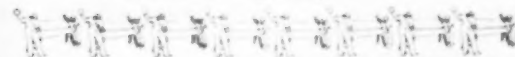
**24**

**...save travel time  
between job and shop**

Like its bigger brothers, the Lockformer 24 makes an 8' Pittsburgh Lock in about 20 seconds. Equipped with the Power Flanger Attachment, it flanges both straight and curved pieces.

Add its terrific speed to the additional time saved by making fittings as needed, right on the job, and you've got a real profit maker. That's why hundreds of shops have the '24' as a "second" machine... a portable for use in the field or as an extra Lockformer for general use in peak volume periods.

Find out how little the '24' costs—how much it can save you in fabrication time. Write for the Lockformer Catalog today!

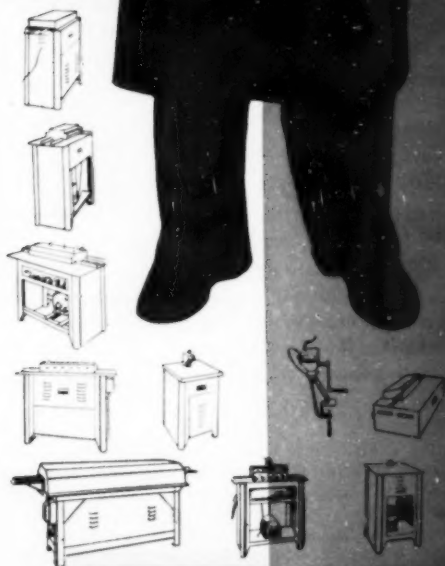


One Man with a Lockformer makes more Pittsburgh Locks than sixteen men with Eight Brakes



**THE LOCKFORMER CO.**

4615 WEST ROOSEVELT ROAD • CHICAGO 50, ILLINOIS



## the editor's notebook

now begun to repeat this useful series in their house organ "Trunk Line".

Part 1 of the series appears in Vol. 3, No. 2 of the publication. The first section deals with information on how to determine heat loss. In subsequent issues of "Trunk Line", further logical, step-by-step, simplified data will describe the design of a forced warm air heating system. Sample problems enhance the value of this useful series.

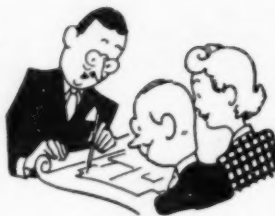
### Use of Gas Increases Nearly 300 per cent

Minneapolis—The per capita use of gas has increased 287 per cent in the United States since 1935, according to figures released for the Midwest Gas Association's annual meeting held April 2 in this city.

H. Leigh Whitelaw, managing director of the Gas Appliance Manufacturers Association, has ascribed the gas industry's phenomenal growth to the ability of private enterprise supported by some \$9 billion of private capital, including thousands of small investments, plus the funds of millions of mutual insurance policyholders.

Gas is now the sixth largest industry in the country, Whitelaw stated. Further factors cited for the increased status include the more than 1,000 local public utility companies, supplying nearly \$2 billion worth of gas to over 30 million residential, commercial, and industrial consumers; a nearly 400,000-mile network of pipelines, including those conducting natural gas; an increase in gas appliances, equipment and related controls.

## Just the Spot for a



## FURNACE

SUN dealers find it easy to sell furnaces because there's a SUN model and size for each prospective job.

If it's a small 4½-room residence, where space is at a premium, the SUN dealer will recommend a Hi-Boy that will fit into closet-size space to deliver 60,000 Btu of home heating comfort.

If it's a larger installation he has his choice of 22 models and sizes with capacities ranging up to 224,000 Btu. No matter what the job, there's always "just the spot" for a SUN furnace.

And selling is easy because SUN owners of previous years have found SUN furnaces entirely satisfactory and are always eager and willing to recommend SUN to their friends and neighbors.

The SUN franchise is valuable. If you have one, hang onto it. It will give you priority on deliveries when materials are short.

Ask for your copy of the SUN catalog of Patten-rod Furnaces.



## the editor's notebook

### FPC Consolidates Applications for Pipelines

Washington, D. C.—The FPC has consolidated two more applications for the April 30 hearing on five proposals involving the construction of natural gas pipe-line facilities to serve market areas in New Mexico, Arizona, Nevada, and California.

The two new applications, one by El Paso Natural Gas Co., El Paso, Tex., the other by San Diego Gas and Electric Co., San Diego, Calif., involve additional uses of natural gas in the respective areas. All applications involve transportation of gas from a common source.

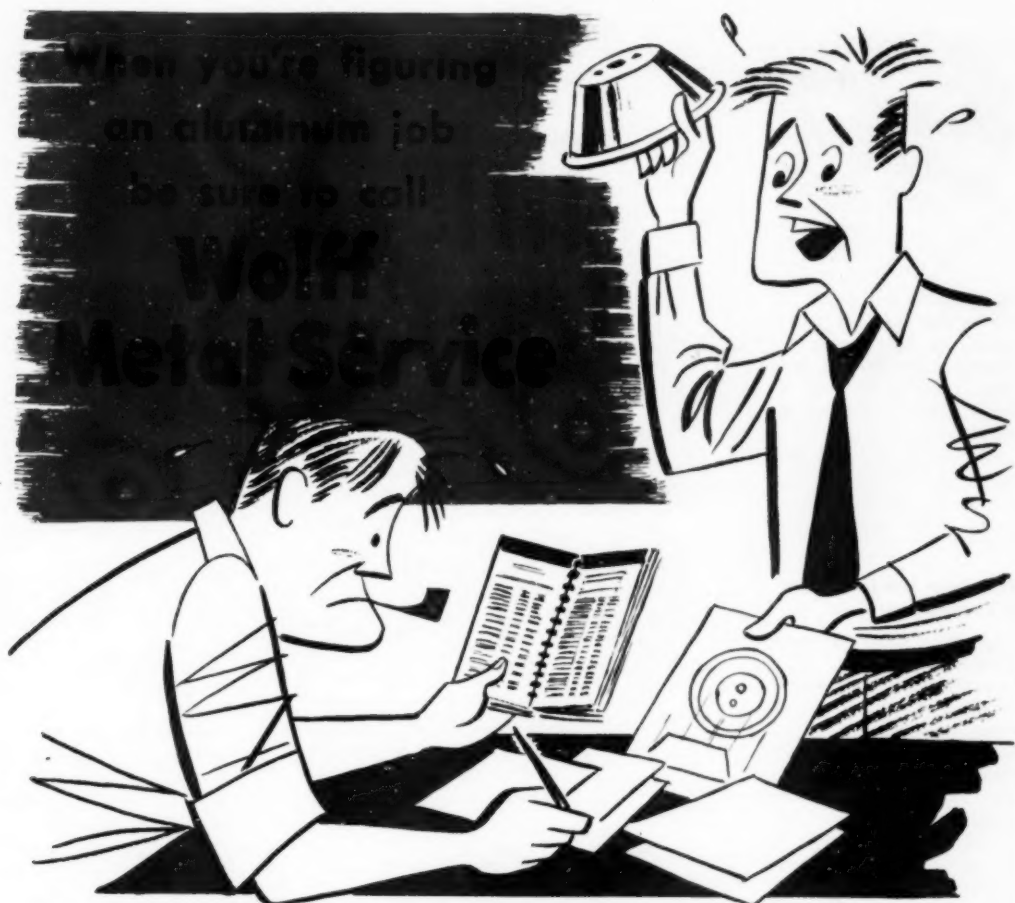
### Canada not Ready to Export Natural Gas

Canada will retain, for the present, the bulk of its natural gas resources for its own industrial development. The Alberta Conservation Board has rejected five recent applications for permission to export natural gas to the U. S. from the Alberta oil fields.

A supply of "surplus" gas is reported in one locality northwest of Edmonton, and the Board has authorized gas shipments from this area to the Pacific Northwest. However, such a comparatively small amount of the available gas is designated as "surplus" that a Washington State utilities official has expressed doubt that the cost of building a pipeline would be justified.

### PAD Authorizes 36 New Natural Gas Plants

The Petroleum Administration for Defense has recently approved priorities-assistance applications for construction of 36 new natural gas process-



## **Larger diversified stocks of aluminum sheets help you save waste**

Any job calling for the use of sheet aluminum involves three-dimension figuring . . . width, length and gauge. But many alert buyers have gone on to think seriously about "the fourth dimension" that affects every job — the wide selection of sheet sizes that are offered by Wolff Metal Service. From these large diversified stocks of Reynolds Aluminum — much larger than those generally carried elsewhere — you're likely to find just the size you need to reduce waste or avoid it altogether. The end result is money saved and time gained.

So include Wolff Metal Service as "the fourth dimension" in your thinking on the next job that calls for sheet aluminum. Write, or phone.

**Carbon Steels, Stainless Steels, Aluminum, Copper, Tin Plate, Expanded Metal, Metal Decorating**



**Phone WALbrook  
5-3200**



**BENJAMIN WOLFF**

Service Office and Warehouse — 5000 South Dearborn

Chicago Office — 174 W. Washington Ave., Jefferson Building

## the editor's notebook

ing plants having a capacity of over 88,000 barrels a day of natural gas liquids since the beginning of CMP in July, 1951, according to Bruce K. Brown, deputy petroleum administrator.

Five of these plants were completed in 1951; construction of the others has begun or will begin before the end of 1952.

### Aluminum Use Increasing in Construction Field

Louisville, Ky. — Reynolds Metals Co. anticipates a minimum annual consumption of aluminum of three billion lb. within five years, a recent release states. Even under the severe restrictions of 1951, more than one half billion pounds went into construction, the largest single customer of the aluminum industry, accounting for about one-third of the annual output.

Aluminum's uses comprise eight general classifications in the building and construction fields. In order of importance (subject to change), these include Roofing and Siding, accounting for about 40 per cent of aluminum going into building and construction, Windows and Accessories, using another 20 per cent, General Construction Products, which include builders hardware, duct work, fire escapes and the like, Ornamental Products, Pre-Fabricated Buildings, Walls, Partitions, and Ceilings, Doors and Store Fronts, and finally, Highway Equipment.

### Housing Development Utilizes Air Conditioning

A new, low-cost housing development recently opened in

# This book

## IS FOR WHOLESALERS ONLY!

If you as a wholesaler would like to sell more oil burners—make more profits the Nu-Way, don't hesitate even one minute. Fill in the coupon and get your personal copy by return mail!



THE NU-WAY CORPORATION, Dept. A-1  
Rock Island, Illinois

YES — I'm interested in more profits the Nu-Way. Rush me complete details.

NAME \_\_\_\_\_

FIRM NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

ZONE \_\_\_\_\_

STATE \_\_\_\_\_

## the editor's notebook

Dallas has served to provide an important step toward proving the practicality of residential air conditioning.

Each of the new homes, selling for \$12,500, is provided with year-round air conditioning. When finished, the new housing development will consist of 210 houses, believed to be the first such project to offer complete, 12-month air conditioning.

The modern-type, one-story homes are equipped for warm weather with a new packaged type summer air conditioner, designed for residential use. The houses are also provided with a gas-fired warm air furnace for winter use.

A significant feature of the new development is the fact that it has been conclusively proved that residential air conditioning is economically practical in small homes of this type.

### PAD Approves Priorities for Gas and Oil Projects

The Petroleum Administration for Defense had, by March 28, approved applications for priorities assistance in the completion or construction by private industry of 3,573 oil and gas projects, having a total value of \$3,516,961,284, it was announced by Oscar L. Chapman, Secretary of the Interior.

PAD's first approval of such an application, known as Form PAD-26, was granted June 13, 1951.

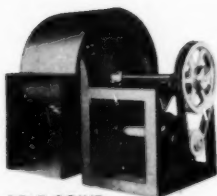
The 36 new plants authorized are among 315 natural gas production and processing projects approved by PAD from the start of the Controlled Materials Plan up through April 1, 1952.



here's why it *Pays You* to install

*Peerless  
Electric*

complete blower units



**BELT DRIVE  
UTILITY BLOWERS**



**PRESSURE BLOWERS**

● Complete, ready-to-install Peerless Blowers are equipped with job-matched Peerless motors. They're sturdily enclosed in all-welded housings that dampen vibration and noise, and stimulate turbulent free air delivery.

Peerless Blowers are easy to install, and, once in operation, they keep going without adjustments.

Profits aren't siphoned off by costly service calls when you install Peerless Fans and Blowers and, since responsibility is centered under one roof for motor, fan and frame . . . you're sure of faster service, better guarantees.

Write today for new catalog showing the complete Peerless line, available through your favorite distributor.

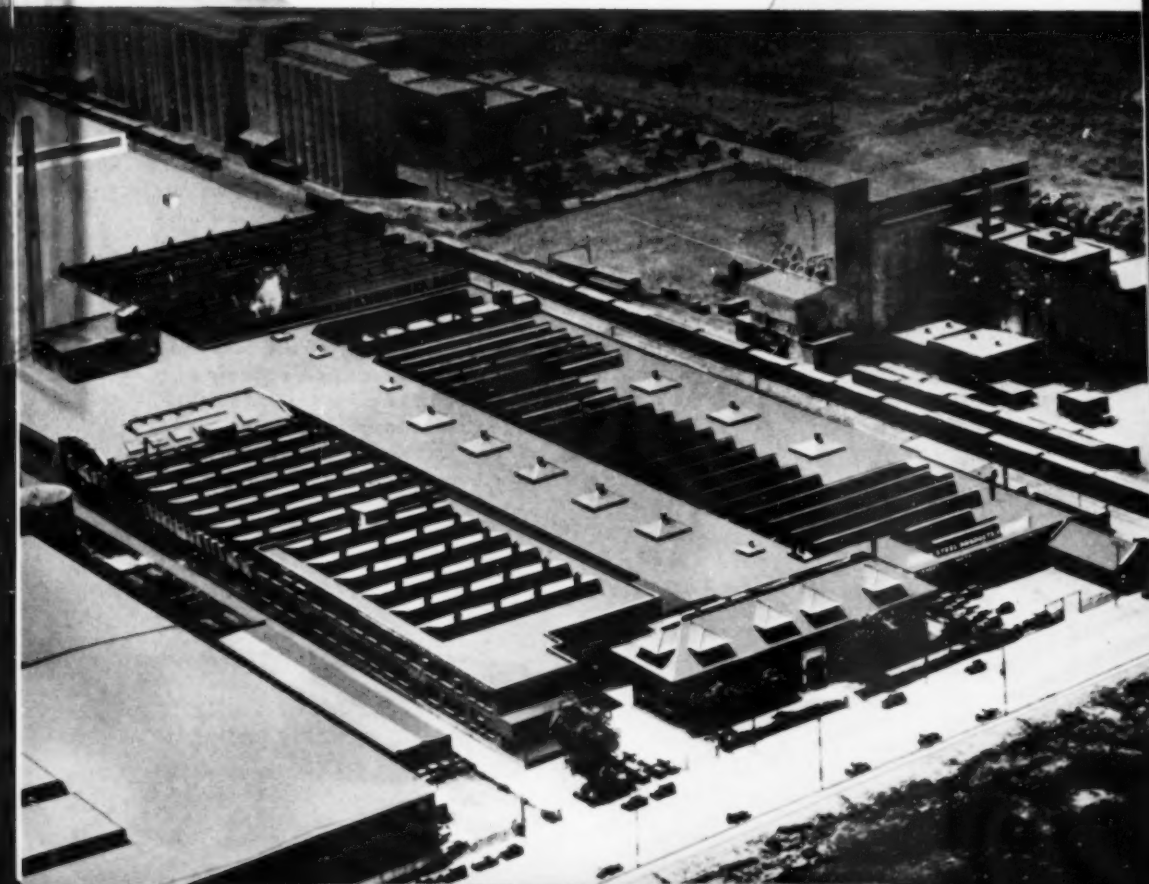
*Fan and Blower Division*

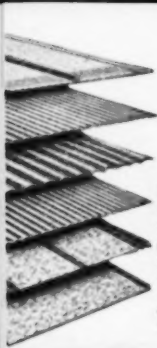
**THE PEERLESS ELECTRIC COMPANY**  
1405 West Market Street • Warren, Ohio





# 50 Years of helping America





#### Milcor Steel Roofing

Includes (1) "Two-drain" channel roofing; (2) Non-Syphoning corrugated roofing; (3) 2 1/2" corrugated roofing; (4) 1 1/2" corrugated roofing; (5) V-clip roofing; (6) roll roofing.



#### Milcor

#### Rain-Carrying Line

Includes half-round and box gutters; round and square conductor pipes; and a complete line of accessories, including mitres, elbows, shoes.



Inland Steel Company's Indiana Harbor plant

# ...build better with STEEL!

## MILCOR



...trademark of Inland Steel Products Co., a member of the Inland Steel family of steel-producing and fabricating enterprises...

— for half a century, your partner on the building sites of America

Over the past 50 years, Milcor developments have done much to make steel a standard material for all types of jobs.

Today, Milcor provides the nation's most complete line of sheet metal building products. With them you can do a better job—faster—on all types of work: heating, air-conditioning, roofing, rain-carrying and ventilating.

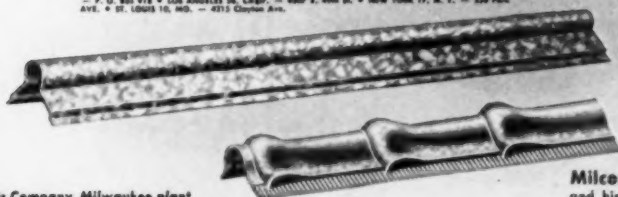
These 50 years of production and distribution "know-how" — and the many raw material resources and production facilities of Inland Steel Company — add up to the reasons why Milcor will continue to be *first* with the finest steel building products — products that are easier to use, look better and do a better job.

## INLAND STEEL PRODUCTS COMPANY

4023 WEST BURNHAM STREET

MILWAUKEE 1, WISCONSIN

BALTIMORE 24, MD. — 1300 Potomac Highway • BUFFALO 13, N. Y. — 64 Maple St. • CHICAGO 9, ILL. — 4101 S. Western Avenue • CINCINNATI 16, OHIO — 1910 Spring Grove Ave. • CLEVELAND 14, OHIO — 1241 S. 38th St. • DETROIT 3, MICH. — 400 Amsterdam Ave. • KANSAS CITY 21, MO. — P. O. Box 218 • LOS ANGELES 26, CALIF. — 4207 S. 40th St. • NEW YORK 17, N. Y. — 529 Park Ave. • ST. LOUIS 10, MO. — 4713 Clayton Ave.

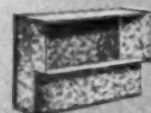


Inland Steel Products Company, Milwaukee plant  
One of three plants that provide more than 750,000 sq. ft. of production facilities.

#### Milcor LockJoint Furnace Pipe, Elbows and a complete line of fittings are available in a wide selection of sizes and gauges.



#### Milcor Louver Ventilators for installation in brick, stone, masonry, or frame construction.

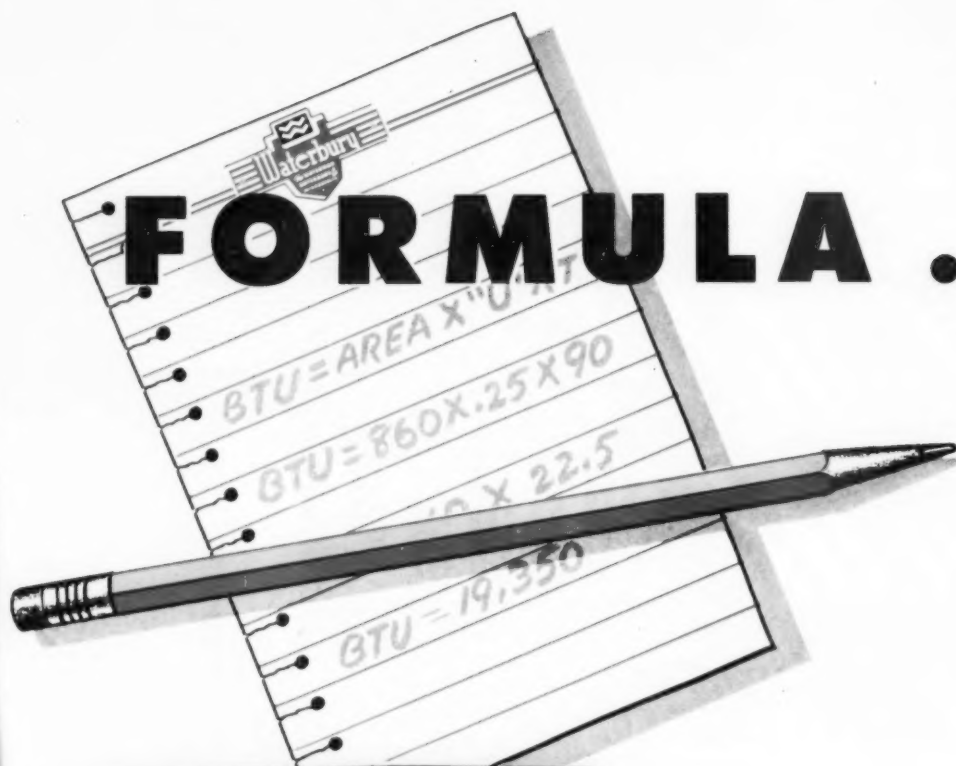


#### Milcor Forced Air Pipe and Fittings

Include round pipe, rectangular duct, elbows, angles, reducers, and caps, take-offs, stack adapters, transformers, etc. — a complete family of units engineered to work together, to meet almost any condition.

Milcor Roof Trimming includes ridge roll and hip shingles (shown above), roll and formed valley, finials, corners, flashing shingles, roof edge and eaves drip, etc.

# FORMULA .



## • • FOR MORE DEALER SALES!

Every day more and more dealers learn that the best formula for customer satisfaction is sound merchandising plus Waterbury quality. There's a unit for every heating job, and the attractive appearance of the Waterbury line appeals to customers instantly. But more important—dealers have learned that Waterbury builds consumer acceptance and confidence by consistently maintaining the highest warm air heating standards.

# Waterbury

"IT'S WHAT'S UNDER THE  
CASING THAT COUNTS!"

The Waterman-Waterbury policy provides exclusive distribution rights and develops a close, personal relationship between dealers, distributors, and factory. You will find, as many dealers have, that the dependability and economical operation of every Waterbury furnace or winter air conditioner is your assurance of a satisfied and growing list of customers.

## The Waterman-Waterbury Co.

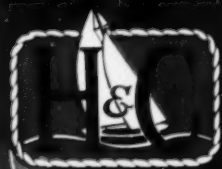
OVER 45 YEARS OF WARM AIR HEATING

1122 Jackson Street N. E.

•

Minneapolis 13, Minnesota



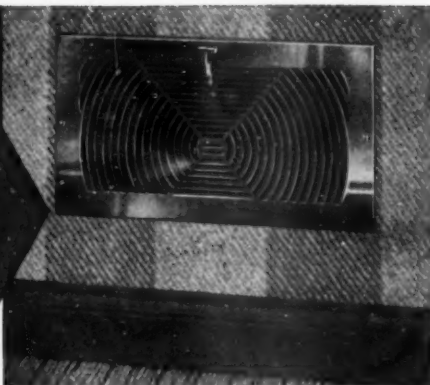


No. **40**

**DIFFUSAIRE LINE**

**AN ENTIRELY NEW  
and BETTER CONCEPT  
in PERIMETER HEATING!**

Attractive, exceptionally efficient, produced as the result of extensive research in the field of perimeter heating, the H&C DIFFUSAIRE is the only sidewall register practical for all types of perimeter heating including small duct systems. It provides very definite advantages over any other register which may be used for this purpose.



X marks the location of the No. 401 sidewall register in this absolutely un-retouched laboratory smoke test photo.



PROVIDES 170° SPREAD OF WARM AIR TO ROOM'S CENTER  
DEFLECTS JUST THE RIGHT PORTION OF WARM AIR TO 170°  
ELIMINATES THE NECESSITY OF CUTTING DOWN FURNITURE  
PROVIDES POSITIVE MEANS OF BALANCING SYSTEM

**SIZES AND FINISHES AVAILABLE: 10 x 6, 12 x 6, 14 x 6 —  
PRIME-COAT AND METALUSTRE FINISHES**

**A MEMBER OF THE "400 SET" IN CLASS AND QUALITY  
PRICED IN THE LOWER BRACKET OF AIR CONDITIONING REGISTERS**

**NEW CATALOG NO. 52:** Mailing of our new catalog including complete details of the No. 40 and ideal registers for every type of installation, will be made approximately May 15. In the meantime see the No. 40 at your H&C Jobber.



**HART & COOLEY MANUFACTURING CO.**  
500 EAST EIGHTH ST., HOLLAND, MICH.  
In Canada, Hart & Cooley Manufacturing Co., Fort Erie, Ontario



**WORLD'S LARGEST and MOST PROGRESSIVE PRODUCERS OF REGISTERS and GRILLES**

# News Round-Up



## The Answer — Selling

"AMERICAN BUSINESS is approaching a period when the need for creative selling will soon be greater than at any time in the history of our country," stated Harold W. Sweatt recently, upon his acceptance of the Howard G. Ford annual sales award for 1951 from the Sales Managers Association of Philadelphia. Sweatt pointed out that "somewhere in the near future lies a buyer's market, a return of normal conditions with a great outpouring of civilian goods unhampered by shortages or other wartime disturbances. Such selling alone can prevent recession, create new demand, and build new markets for goods in unlimited supply."

"By creative selling," the industrialist added, "I mean not just telling the customer about goods, but teaching their specific value to a specific application and actually creating a demand that didn't exist before."

Sweatt pointed out that selling as it is known today, apart from the retail trade, "is something fairly recent, an aspect of our specialized industrialized society." He added:

"Benjamin Franklin invented an excellent stove—but another century passed before heating became centralized in furnaces. The sample case, the catalogue, and the order blank did not appear until the 1800's."

"New products, new technological developments, new areas for enterprise have crowded upon us in the past 10 years."

"In 1940, 2,905,000 people were engaged, in one capacity or another, in sales work. In 1950, just 10 years later, this number was 3,740,000, and increase of nearly 30 per cent. How much higher this figure will go is impossible to say."

"What every company needs is inspired, creative selling. Backed up by genuine and valuable service to customers, such creative selling will carry us victoriously through the period lying just ahead, and through the unlimited future beyond."

## Predict High Quality for 1952

Alan E. Brockbank, president of the National Association of Home Builders, in describing the housing set-up for 1952, listed ten major developments in the design and construction of homes that will make the 1952 house the best value for the money in the history of home building, provided that the builders can obtain the needed mortgage financing and the critical materials.

Among the features mentioned was "Increased use of dual winter heating and summer air conditioning units. A limited supply of such equipment is now in construction at a figure which allows its use in homes costing as low as \$12,000 in some areas."

## Deferred School Projects Get Material Allocations

SOME 500 ESSENTIAL school and hospital projects, deferred because of shortage of vital construction materials, will receive construction permits as well as allocations of critical materials for the third and fourth quarters of 1952, it is announced by the Federal Security Agency.

School officials receiving construction permits and allocations may proceed at once with site clearance and excavating as well as placing orders for controlled materials. FSA Administrator Oscar R. Ewing has announced.

Permits will be issued by the Office of Education of the Federal Security Agency. Authorized projects will include all school and hospital facilities for which applications have been received in the seven localities which have been designated by defense officials as employment hardship areas. These include New York City, Boston, Washington, D.C., Portland, Oreg., Seattle, San Francisco, and Los Angeles.

Hitherto, in many instances, school and hospital authorities have utilized substitute materials and have developed conservation techniques in order to continue construction on projects which had been started and held up, due to shortages of critical materials.

## Ohio Jobber Holds Home Show

THE ROBERTSON Heating Supply Co., Alliance, Ohio, believes in setting a pattern for other heating jobbers to follow if a closer relation between the general public and the industry is to be developed. To emphasize this relationship, this progressive organization held its own Home Show at the National Guard Armory in Alliance on Friday and Saturday, April 18 and 19, with the cooperation of 35 manufacturers. The latest developments in heating equipment and accessories were on display and under demonstration.

Friday, April 18, was reserved for the dealers of Eastern Ohio and Western Pennsylvania and to company employees. A continuous free buffet luncheon was served to all in attendance. On Saturday the exposition was open both to dealers and to the general public.



## News Round-Up

### **National Sheet Metal Workers Announce Apprenticeship Contest Awards**

NATIONAL JOINT Sheet Metal Workers, Apprenticeship Committee, Chicago, has just announced the winners of the Fourth Annual Apprenticeship Award and Contest. The awards for the three top places, consisting of cash prizes of \$200, \$125, and \$75, were sent to Matthew F. Greco, Malden, Mass., George T. Wyman, Jr., New Orleans, La., and Kenneth Vogel, Milwaukee, Wis., respectively. An Honorable Mention Certificate went to Edwin T. Hawkey, Portland, Oreg.

In addition to the cash prize award, the winners received an engraved pocket medal which they may carry with pride to display to their fellow workers. A Certificate of Award, suitably inscribed, was also presented to the above apprentices, as a symbol of remembrance for their efforts and diligence in manual skill which has won for them the honors for 1952.

More than 950 sets of problems were distributed to local Joint Apprenticeship Committees and Schools in all parts of the United States and Canada. Each Committee conducted a local contest and entered their first place winner in the National Contest. Such a large entry list compelled the judges to base their decisions on minute details of construction, pattern development and explanation. According to the Committee, every entry was worthy of award or mention.

The Minneapolis Local Joint Sheet Metal Apprenticeship Committee was selected as the winner of the Plaque Award for accomplishing the most important contribution to the training and guidance of young Americans in the manual, manipulative skills and science of the sheet metal trade during the year 1951. This Committee will receive the plaque for its outstanding achievements in an appropriate ceremony at the Sheet Metal Contractors National Association convention, scheduled for May 12-14, 1952, in Rochester, N.Y.

The New Orleans Sheet Metal Workers' Joint Apprenticeship Committee received Honorable Mention for its outstanding achievements and contributions in the training of apprentices during the year 1951.

### **Engineering Committee for Residential Air Conditioning**

RECOGNIZING THE RAPID acceptance by the public of air conditioning for the home, the Air Conditioning and Refrigerating Machinery Association has recently organized a new engineering committee to establish an application standard for the entire industry.

H. Charles Pierce has been elected as the committee's first chairman. He has served previously on important

committees of the American Society of Refrigerating Engineers, the American Society of Heating and Ventilating Engineers, and the American Gas Association. With this wide experience and background to aid him, the new committee will soon be in a position to make suitable recommendations that will enable the residential air conditioning field to enjoy a continuous and healthy growth.

### **Small Pipe Warm Air System Manual**

TO MEET A DEMAND of the Federal Housing Administration for a manual on small pipe systems, a special meeting of a group of members of the National Warm Air Heating and Air Conditioning Association was called on March 28, 1952, in Chicago. The purpose of the meeting was to discuss small pipe perimeter warm air systems. Following a discussion covering various phases of these systems, the association's president, W. D. Redrup, appointed a special committee charged with creating and publishing a tentative design and installation manual.

It is believed that FHA has discouraged the approval of small pipe systems on building projects throughout the country because of the lack of an industry standard on these installations. Furthermore, some dealers have been making small pipe installations without the proper design and installation procedure to follow.

The special committee now at work drawing up the design and installation manual has as its objective the publication of the manual during May, 1952.

### **Your Income Tax — Now and Next Year**

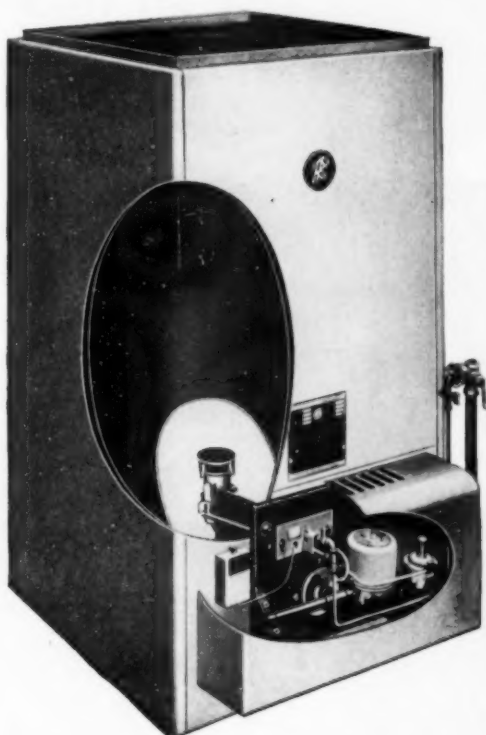
If you think that your income tax was a big one this last March 15th, wait until March 1953! The amount paid this year reflected only a part of the tax boosts which were passed by Congress in 1951. The total impact of these increases will show up in the 1952 rates. Many of us do not realize the unpleasant fact that wage and salary earners generally will pay approximately 10 per cent more than they passed out in 1951.

Now is a good time to consider some resolutions for the tax "new year", now that the last deadline is still fresh in our minds. It might be well to consider the tax consequences of every decision; this means in routine operations as well as in special transactions. When you are not sure, call your professional tax adviser.

Remember that tax planning and tax strategy are more important this year than ever. At the current tax rates, a businessman cannot afford to slip into any tax pitfalls, nor should he overlook any opportunities for tax saving. Keep complete records which will support all deductions for which there may be a shadow of a doubt later on.

count on the  
**RICHMOND**  
gas-fired, steel  
gravity furnace

SG-10...70,000)  
SG-15...90,000) BTU Input per Hour



## for low-cost homes and housing developments

Here's a soundly designed, well-built gas-fired gravity furnace... finished in light green hammertone enamel, the Richmond SG is an attractive and efficient heating unit.

While low in cost, it gives the same top performance you expect from any unit bearing the Richmond label.

### NOTE THESE SPECIAL RICHMOND FEATURES:

**12- or 16-gauge steel heat exchanger**, welded construction for maximum durability.

**Remote pilot igniter**, for convenience and safety when lighting burner from outside of furnace.

**Mounting plate secured by 4 nuts**, for quick removal of burner in servicing.

**Control hood, enclosing controls**, optional equipment.

**Fully approved by AGA.**

*When quality and economy count... count on Richmond.*



# RICHMOND

RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.

Get your information on this Copper Valley

Richmond Radiator Company AA 5  
19 East 47th Street, New York 17, New York  
Please send me full information on Richmond gas-fired gravity furnaces.

Name.....

Company.....

Address.....

# "They say I'm a whiz at selling Chronotherms—I say it's easy!"

says Cleveland heating control dealer Frank Brennan



Frank Brennan, left, talking to Honeywell representative Ken Dicht

"It is easy. It's a product that once shown, sells itself."

"They say I'm good at it around here because I average about 200 Chronotherm installations a year, and since starting in business have installed over 3,000; practically all of them on service and replacement jobs, which make up the bulk of my business."

"The sales tactics I use—if you can call them that—are pretty simple."

"About the only hard and fast rule I have is: when that truck leaves on a service call it is never without at least one Honeywell Chronotherm. And when I talk to a customer I never fail to bring one out—and put it right in the customer's hand."

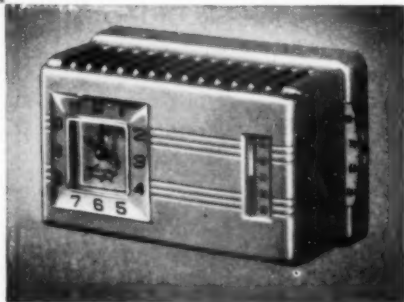
"I tell the customer that this little device is the most economical and convenient way to get fully automatic heat yet devised. I point out that there is no costly, time-consuming installation work involved in replacing an old, manually-operated thermostat with a new Chronotherm. I then cover the regular sales features, which sound pretty wonderful to a home owner used to an old, hand-operated model."

"After being told a few facts, the customer generally sells himself. Sometimes I am able to go ahead with the installation right on the spot—pull up that extra wire—make the hook-up—and get on to the next sale as quickly as possible."

"The Honeywell Chronotherm is both *easy to sell* . . . and *easy to install*."

## Sell the famous Honeywell Chronotherm!

Latest surveys show that 3 out of every 4 families with thermostats raise and lower temperature settings every day by hand. This represents a big potential market for any dealer selling the Chronotherm, because the Honeywell Chronotherm automatically raises temperature in the morning, automatically lowers it at night, besides saving fuel! For full facts about the Chronotherm and other outstanding Honeywell controls, call your local Honeywell office. Or write Honeywell today, Dept. AA-5-127, Minneapolis 8, Minnesota.



MINNEAPOLIS  
**Honeywell**

*First in Controls*



*Another Honeywell  
Plus-Profit Idea!*





**BUSINESS IS**

**"LOOKING UP"**



... for contractors selling the 'Kno-Draft Method' of Residential Warm Air Heating

When we say business is "looking up," we mean it literally. Look up at the ceiling in the picture. See that handsome Kno-Draft Air Diffuser? That's your new best seller for warm air heating in homes. It does a better job of *even heating* for your customers, is easier and *more profitable* for you to install.

Here's all you do: Run your furnace bonnet up to the attic and take off for the diffuser outlets in the ceilings. Use prefabricated round duct for runouts and elbows,

with easy-to-install wrap-around insulation. You'll save time, cut costs.

Figuring a job is simple, too. Just use the "inches of heat" method to size your Kno-Draft Ceiling Air Diffusers. It's practically impossible to go wrong.

If you want *your* business to "look up," get in on the ground floor with Kno-Draft. It's a time-tested principle proved by thousands of business and industrial installations. Mail the coupon today for all the facts — the advantages that home owners "go for," installation details, the bigger business you can expect.

TRADE MARK - KNO DRAFT - REG. U. S. PAT. OFF.

**W.B. CONNOR ENGINEERING CORP.**

Danbury, Connecticut

**Air Diffusion • Air Purification • Air Recovery**

**W. B. CONNOR ENGINEERING CORP.**

Dept. E-52, Danbury, Connecticut

Please send me full details about the "Kno-Draft Method" of residential forced warm air heating.

Name .....

Position .....

Company .....

Street .....

City ..... Zone ..... State .....

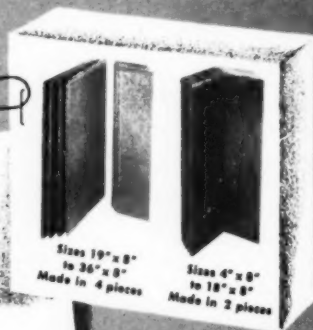
# MONCRIEF

Snap Lock Warm Air Round  
Pipe... NOW AVAILABLE...  
and Carton Packed at  
NO Additional Cost!

## MONCRIEF Snap Lock Wall Stack

*Quicker to  
Assemble...  
Easier to  
Handle...  
Quicker to  
Install*

## MONCRIEF Snap Lock Duct



THE HENRY FURNACE COMPANY • Medina, Ohio

HEATING AND AIR CONDITIONING UNITS

**MONCRIEF**

FURNACE PIPE AND FITTINGS



## *Arnold Kruckman's Washington Letter*

### In Which Direction Are We Headed?

The word that comes from Government by way of the releases from NPA, OPS, DPA, and Commerce Department, would lead you to assume that steel is more plentiful, and will be still more plentiful as the year advances. The implication is the mills will be able to supply more of their products, and that the warehouses have such a bountiful supply that no one should have trouble in securing metal, and that gradual relaxation is here, and that decontrol is not far off. You get the same impression about aluminum; you even might feel that copper will not be so difficult.

It is difficult to define the exact character of public pronouncements as they are reflected in Government releases. Double-talk used to be more or less exclusively a characteristic of Mr. Acheson's State Department. Those of us who have to deal with Government hourly, and who wade through the tons of releases daily, sometimes wonder if this disease of double-talk is contagious.

These observations are prompted by the knowledge that the prospect of plentiful supply of metals is not confirmed by what you hear when you visit the people you know, in places of responsibility, in the offices of the various Government agencies. Actually, no one seems to know what is immediately ahead in the supply of aluminum. Copper, of course, is not considered to have eased in any way. Steel, which seemed to have the best prospect of more plentiful supply, in the opinion of those who maintain constant contact with sources that should know, will increasingly be tighter as the year gets older. Thus you have the official statements which lead to the optimistic expectation of more metal, and the unofficial, informal, private word that even steel will be less plentiful. Never in the experience of this correspondent has it been so difficult to determine where truth lies. And it is not easy to understand why there is so much confusion. One can't understand why Government should misguide citizens, nor is it sensible to suppose that the representatives of industry, who are functioning in Government temporarily, should misguide their fellow members of industry who are outside of the magic circle of Government.

#### **Wage increases granted**

Housing starts increased 27% in March, the number being more than 98,000 for new permanent non-farm dwelling units, according to the U. S. Bureau of Labor Statistics. This is a record high for the month of March. The Building Materials Division of the U. S. Department of Commerce reports that capital outlays for new construction in March continued at record levels. There were substantial increases in private home building activities as well as in most all other kinds of construction, boosting the dollar volume of new construction in March to more than \$2,250,000,000, a rise of 13% over February. Total expenditures for new construction during the first quarter of 1952 exceeded \$6,400,000,000. It is interesting, at the same time, to learn the Construction Industry Stabilization Commission, of the Wage Stabilization Board, outlined, early in April, its wage stabilization policy for 1952. The Construction Industry Stabilization Commission, as the delegated arm of WSB, sets the pattern for wage standards and controls for the industry of which the sheet metal industry is a part. The policy continues to approve increases in area rates, raising the rates not more than 10% above the hourly rate for the same job classification in the same area in June and July of 1950. In some cases the Commission also will approve additional increases of not more than 15c an hour in excess of the rate approvable under the 10% formula. It announces it will continue to act on other applications for wage raise increases on a case by case basis. It is emphasized no area rate may be increased without the prior approval of the Commission. Fringe benefits may be approved when the employer contributes not more than 7½c to health and welfare funds, limited to the payment of temporary disability benefits, hospital expense benefits, surgical expense benefits, medical benefits, term life insurance and accidental death and dismemberment benefits. Also it will approve payments towards pension funds, annuities, vacation plans, paid holidays, and the like. If the employees or employers agree to forego any or all of wage



## Washington Letter

---

increases under these regulations, the Commission will consider applications that the amount of payments may be charged against the wage increase approvable under the 10% plus 15% formula and against any future allowable increases. The new regulations define retroactivity of a wage increase under the 10% formula and under the 15% formula which may go back as far as February 1, 1952, but not earlier than the expiration or reopening of the last collective bargaining agreement. These policies govern the Commission until December 31, 1952, unless wage and price controls are removed or there is a major new development in Wage Stabilization Board policies.

### Recognizing trends

There will be very few persons who will challenge the statement that the foregoing policies, and regulations, seem to reflect a trend towards socialization. There have been many such evidences of the trend. But it is doubtful whether even the great majority in the Capital really felt that there was a deliberate intent in the Government Administration to socialize our institutions. It is true it was generally recognized there was a drift towards socialization, but it was indifferently assumed that it was a sort of patchwork concession to dominant influences among the voters, an expedient to avoid giving offense to a vociferous element. Like the rest of the nation, spread all over the wide breadth of this country, the million and a half people who live in and about Washington, of whom it can be said that at least three quarters are directly, or indirectly employed by Government, the people in the Capital have been over-complacent in going along with the techniques that have tended to socialization. But when Truman announced that he had ordered the Government to take over the steel properties, owned by more than a million citizens

of the U. S., taking possession without any legal authority so far as constitutional lawyers outside of the Government could discover, opinion in Washington suddenly crystallized that we now seem in a deliberate groove of socialization. The shock of it touched every one. Washington is sensitive to such public reactions probably more than any other area in the U. S. It was difficult to appraise the feeling of career employees. It is natural they should trim their sails to go along with the wind. It was quickly perceived that this is a showdown.

### Government channels

It is essential for you out there in the country, particularly business people, to realize that the people in Government, who will have a great deal to do with molding whatever may come, are waiting to see what you think and what you will do. Naturally the question constantly arises what is the influence that causes Truman to think as is reflected in his steel seizure action. It is doubtful whether the staff immediately around him, intimately connected with him, have much to do with his decisions. They are probably the channels through which others transmit their hopes and desires to the President. Leon Keyserling, the economist, is regarded as the most direct approach to the President's mind. But behind Keyserling there is little doubt the most potent and powerful influences are Assistant Attorney General Peyton Ford, and, of course, Secretary of State Acheson. Ford has long been regarded as the real Attorney General regardless of who held the title. It was no secret in Washington that Ford had only the most superficial relations with McGrath, who is considered moderately conservative. Ford stands in powerful relationship with Secretary of Labor Tobin, who, in turn, is considered the dominant influence in the Cabinet.

# UTILITY

A

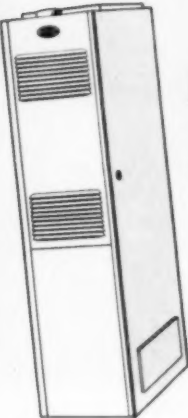


**50<sup>RD</sup>**  
DUAL  
WALL  
HEATER

**DUAL  
WALL HEATER**

Your first winner in the profit stakes is Utility's 50 RD Recessed Dual Wall Heater. Why? Because it's been a sensational seller ever since it was introduced. And there are good reasons for this. It's low in price...it gives living level comfort, circulating warm air where your customers want it...and prospects love its cool-to-touch Fiberglas insulated panel. Fully automatic controls...50,000 BTU input, standard 16" center studs...60" high, 17" wide, 35,000 BTU output...AGA approved, and 100% handsome! AGA approved.

A  
♥



**70<sup>FA</sup>**  
FORCED  
AIR  
FURNACE

**FORCED  
AIR FURNACE**

The second hands-down winner is Utility's new 70 FA Forced Air Furnace. It's competitively priced, and it has all these easy-to-sell features: newly-engineered Sy-Lent® heat exchanger practically eliminates noise as furnace heats and cools...Dy-Rekt® drive blower assembly is the quietest yet...approved for zero clearance, and can be safely installed next to combustible material without outside insulation...easy to install, can be spotted in only 14" x 25 1/2" floor space (in closets, alcoves, etc)! AGA approved.

♥  
V

**UTILITY**  
TRADE MARK



**MAKE MORE PROFITS YEAR-ROUND WITH  
UTILITY HEATING AND COOLING EQUIPMENT  
MAIL COUPON TODAY!**

**UTILITY APPLIANCE CORP.**

4851 S. Alameda St., Los Angeles 58, Calif.

Please send me information about how I can build bigger year-round business with Utility Heating and Cooling Equipment.

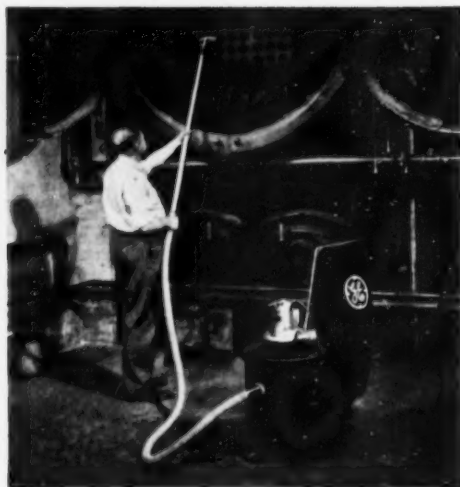
Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



## Make Extra Profits IN THE SLACK SEASON



Keep your service crews profitably occupied *all year round*. Simply push furnace and boiler cleaning in addition to your present services.

The G-E Heavy-Duty Cleaner is efficient, compact, mobile and easy to handle... makes a big hit with cleaning crews (1 full h. p., weight only 43 pounds). You can easily clean flues, air ducts and chimneys too, by adding the G-E Chimney Cleaning Kit. This includes shield, crank, flue brush, duct brush and 32 feet of extensions.

Start your crews now on this profitable addition to your business.

**YOUR FIRST STEP** toward  
Lower Furnace Cleaning Costs and MORE  
Satisfied Customers is taken when you mail  
coupon below.

**Furnace and Boiler Cleaners**

**GENERAL  ELECTRIC**

GENERAL ELECTRIC COMPANY, Dept. 22-4127  
1285 Boston Ave., Bridgeport 2, Conn.

Certainly, I'm interested in more efficient Furnace Cleaning Equipment. Send details.

NAME .....

FIRM .....

ADDRESS .....

CITY .....

ZONE .....

STATE .....

### Washington Letter —

Observers in Washington believe the seizure of steel is the forerunner to the seizure of other fundamental industries. As a matter of fact, the socialization of the major units of industry has advanced so far that it would take little except the pronouncement of formal terms to complete the process. For instance, transportation, meaning railroads, air transport, traction and bus transport and inland water transport, is controlled and regulated by Government in so many details that the industry has very little freedom or initiative left. And this is certainly true of public utilities. The industries, like coal, and the products of petroleum, which are highly unionized, are regarded as more or less next in line for the same processing that has happened to steel. And obviously, as Government takes each step, its technique becomes more assured and its action swifter. What seems to have escaped some of the labor union people is the obvious fact that what is happening to industry inevitably also will happen to the labor unions. If you take away freedom of choice, as has happened in the Wage Stabilization Board's formula, compelling a worker to belong to a union whether he wishes to or not, it is logical that the worker will be regimented in every other relation to life that Government may deem appropriate.

What most people seem to have lost sight of in this controversy over the steel seizure is that it isn't now a question of industrial rights or labor rights — it is a question of whether what appears to be Executive lawlessness is the fundamental basis of our national existence. In other words, the time is upon us when we must decide whether what Truman has done is what we wish him to do, whether it is what we, as a people, believe is the intent of our Constitution and Bill of Rights, or whether we wish to go to the polls and correct those things which Truman's action symbolizes. The problem is not conventional politics. It is the absolutely bedrock, fundamental question of the relation of the Government to the individual, or the individual to the Government. It has been our understanding that the Government belongs to the people, that the Government is simply an organization to act as umpire, and to police those relations of the people that require an arbiter. This ideology always presumes that the Government must be submissive to the people who are the Government. But if the socialization, inherent in the steel seizure, typifies the relation of the Government and the people, it means that the Government absolutely either directly or indirectly, dominates and controls the people; in other words, that the people are made for the Government, not the Government for the people. You get a taste of this in Truman's outburst when he told the Congress that he will call it back into session again and again unless it votes the billions that he wants for the domestic needs and for the operations in Europe and Asia, operations which Congressman Howard Buffett of Nebraska denominates thus: "Our global policies are insane — except as a crafty scheme for the destruction of the



**IF** you don't  
want to work  
all your life...

You're in business to  
make money (and so are we)...

And we believe that MOR-SUN means MORE MONEY for  
you (and us)... Because MOR-SUN gives you *everything*  
you need for a more profitable business...

That's right... more money for MOR-SUN merchandisers.  
So if you don't want to work all your life... write, wire or  
phone us (if you're in a hurry to retire)...

**MOR-SUN Pressed Steel Forced Air  
and Gravity Furnaces...for GAS and OIL**

MOR-SUN FURNACE DIVISION  
**MORRISON STEEL PRODUCTS, INC.**

601 AMHERST STREET • BUFFALO 7, N.Y.



"Sells on Sight"

# OHIO VALLEY USES ONLY PRIME GALVANIZED STEEL



## FURNACE FITTINGS

All Ohio Valley Furnace Fittings are made from prime quality, full gauge, galvanized steel—especially selected from the best mill production for

quality furnace fittings. Material shortages will reduce the QUANTITY of furnace fittings produced by OHIO VALLEY, but will NOT reduce the QUALITY. To save time on the job, make more profit, and make a better installation at the same time—always use Ohio Valley Furnace Fittings.

DO IT BETTER FASTER—WITH OHIO VALLEY  
CARRIED IN STOCK BY LEADING WHOLESALE



Ohio Valley Hardware & Roofing Company  
METAL MANUFACTURING DIVISION, EVANSVILLE, IND.

### Washington Letter —

American Republic. Others will never accept us as a Master Race. Consider our global military operations. In them our wealth is being wasted, stolen, and frittered away by the billions. Efforts to make these operations honest and efficient cannot succeed. I speak positively — for I know my ground."

### The government's view

In his bitter speech for the benefit of the Congress, Truman says any reduction of the defense budget would be terribly dangerous, would enable Stalin and the Soviets to improve the opportunity to attack us. This contrast to the known questionable relation of Acheson to the Russian picture makes the Truman demands almost incredible. Another angle which reflects our present situation was revealed in those tense hours preceding the steel seizure. For several hours at the White House there was a meeting attended by all Members of the Cabinet, by other White House Officials, and by Defense Administrator Fleischmann, Economic Stabilizer Putnam, Price Stabilizer Arnall and Defense Secretary Lovett — sixteen of the ranking officials of the nation. While they were there, or immediately thereafter, the entire area was slapped under security regulations as if we were at war.

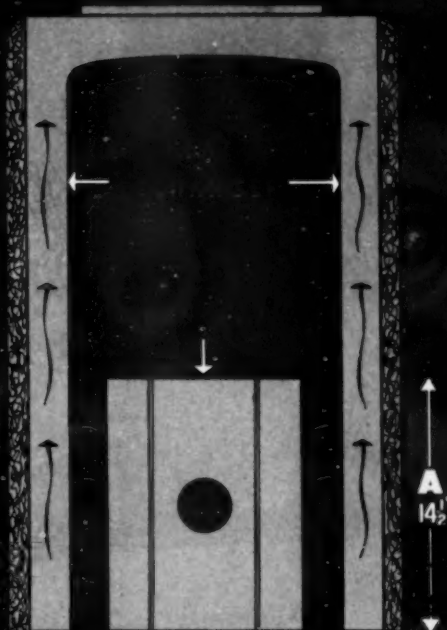
This complete antithesis of the fundamental American principle underlying the relation of the citizen and the Government sharply brings out that a showdown is imminent. To this correspondent it does not appear that the question is whether the Government figures about steel earnings, or the steel company's figures are true.

### A citizen's view

It does not seem possible to determine the facts from the figures and the claims presented by Government, industry or labor unions. They are all special pleaders. Government itself has obviously degenerated to a place where its statements are regarded as partisan and therefore unreliable. To get the facts it will be necessary, eventually, to have an outside body entirely neutral, trustworthy and above suspicion, to make the essential appraisal. But at this time these facts are not in point. The issue is lawlessness, and it is essential that some determination be reached what the citizens may do about it. It is possible that the ferment in the country may force a decision at the next election. But in the mean time with taxation almost to the point where it breaks the back of the individual and business, and with other exactions that may bring about uncertainty and paralysis in business, it is obviously important to business and to business men, to study the whole problem, not as politics but as an issue that affects every relation of business, and every operation of business. It is obvious that if we continue to go as we are going now, something will break. And it is obvious that if the business men of the nation will take their place, actively, and vigorously, in securing the corrections, it will not be so difficult to get back on a sane and steady way of life.

So much more  
**Heating Area**  
 So much faster  
**Heat Transfer**  
 So much better  
**Heating Performance**

FURNACE  
 CASING



with this  
**HEAT-RESISTING STAINLESS  
 STEEL COMBUSTION CHAMBER**

**PANELOX**

Count the advantages—and you'll know why more and more of America's leading manufacturers of oil fired furnaces are switching to PANELOX Heat-Resisting Stainless Steel Combustion Chambers!

**MORE HEATING AREA**—As shown in the diagram (A) the Panelox greatly increases the actual heating area of the heat exchanger—nearly double in some cases. That means *more* heat transferred and utilized—*less* heat up the chimney.

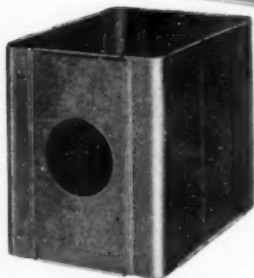
**FASTER HEAT TRANSFER**—Because there are no bricks to act as insulation, heat from the Panelox chamber is absorbed directly into the walls of the heat exchanger (see arrows). That means faster heat transfer—keeps the Panelox from exceeding 1200° to 1300°F. Heat exchanger wall will not get over 700°F.

**BETTER HEATING PERFORMANCE**—Heats up in seconds, for proper combustion almost instantly. Eliminates override, for greater comfort, better room temperature control. Provides quicker, cleaner, quieter heat, saves fuel.

No other combustion chamber offers you—or your customers—so much. Write—*now*—for full details, sizes and prices.

- Interlocking panels slide together without tools.
- Absolutely no backfill, cement or insulation.
- No breakage in shipment or handling.
- Far less shipping weight than other types.
- Four thicknesses of metal at seams—provides extra strength and rigidity.
- Panels made in several sizes for easy fitting to a wide range of chamber dimensions.
- Far round, square, rectangular or pear-shaped installations.

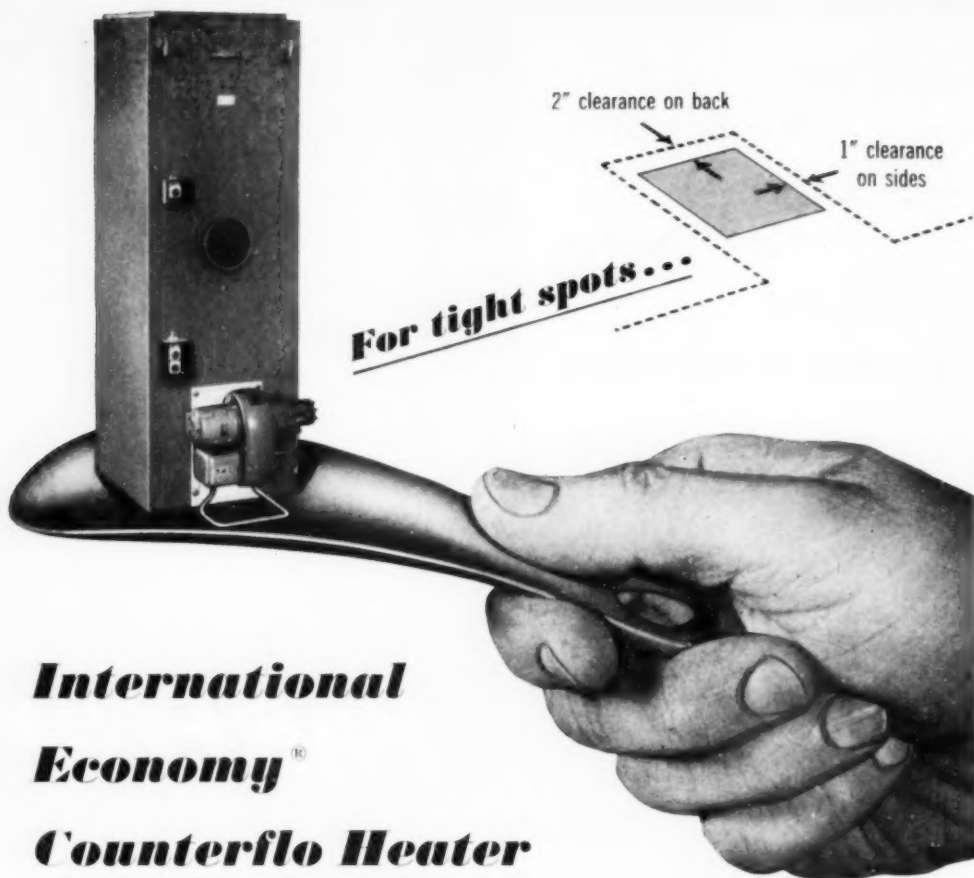
*Check these features*



**Stefco**

STEEL COMPANY

Heating Equipment Div. • Michigan City, Ind.



## **International Economy<sup>®</sup> Counterflo Heater**

—For Oil and All Gases (Nat., Mfd., Mixed and LP)

Only 23" square and 67" high, this Underwriters' and AGA approved International Economy Winter Air Conditioner can be installed practically anywhere—closets, alcoves, utility rooms. There's a huge potential for this Counterflo unit in the new small home market—for perimeter heating . . . for duct systems in homes with crawl space beneath the floor . . . for systems where entire crawl space is used as a plenum chamber. The International Economy Counterflo with its 100,000 B.t.u. oil heat output and 96,000 B.t.u. gas heat output covers them all. It's convertible, too!

Call your distributor now, or write us—cash in on this highly efficient unit for those *tight* installations . . . perfect for you and your customers.

*110 years of heating experience at your service . . .*

# **INTERNATIONAL HEATER COMPANY**

UTICA 3, NEW YORK

WESTERN OFFICE AND WAREHOUSE

101 WESTWORTH AVE., CHICAGO 26, ILLINOIS

### **Easy to install, too!**

The burner, flue outlet, controls, motor, blower and larger sized cleanouts are all readily accessible from the front. It's a completely packaged unit—shipped factory assembled—one fan and limit control and an auxiliary limit control are supplied and factory set for double protection—in addition to the standard controls.





**ANEMOSTAT**

*Announces*

**NEW HIGH PRESSURE ASPIRATING UNITS**

Here's your answer to high pressure air distribution problems—Anemostat High Pressure Aspirating Units. These units consist of a combination of static pressure reducing valve and ingeniously designed sound trap, and one of several types of Anemostat Aspirating Air Diffusers. Primary air is brought to the unit at velocities up to 4,000 fpm and static pressures up to 4 in. wg. Static pressure is reduced and the sound of the air attenuated to acceptable limits. The air at low static pressure is delivered to an Anemostat Aspirating Air Diffuser to assure draftless air distribution.

*Write for Bulletin No. 41*

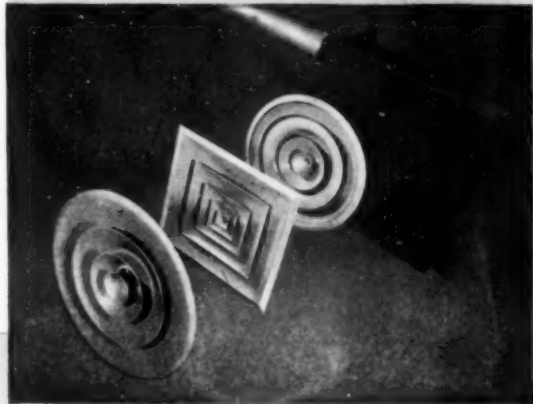
**ANEMOSTAT®**  
**DRAFTLESS Aspirating AIR DIFFUSERS**

**ANEMOSTAT CORPORATION OF AMERICA**  
10 EAST 39th STREET, NEW YORK 16, N. Y.  
REPRESENTATIVES IN PRINCIPAL CITIES



High pressure double duct with Type C-1 diffuser.

Various Anemostat air diffusers may be used on high pressure installations.



*"No Air Conditioning System Is Better Than Its Air Distribution"*

AS 1887



## Lifesaver for Sheet Metal Shops *That Use Nickel Bearing Stainless*

If you are among those handicapped by government restrictions on nickel-bearing 18-8 stainless, large Ryerson stocks of straight chrome stainless may prove to be a life-saver. For example, many who formerly used type 302 sheets to meet mild corrosive action are finding a practical alternate in type 430. And this 17% chrome stainless is on hand now—ready for immediate delivery from your nearby Ryerson plant.

You can order type 430 sheets from Ryerson in all gauges from 10 to 26, in No. 2B or No. 4 finish—and in almost any quantity. You can also get quick

shipment of these additional straight-chrome products: type 405 sheets—types 410 and 430 plates—and type 416 bars. It all adds up to the nation's largest stock of straight-chrome stainless. All with no restrictions on end use, but all time-tested Allegheny stainless of uniform high quality and definitely established characteristics.

In this stock, you may well find a steel that will enable you to maintain satisfactory quality in your product until nickel-bearing steels are again available. So now for stainless, we urge you to consider the versatile chromium stainless steels in Ryerson stock.



### WRITE FOR HELPFUL DATA—On Type 430 and Other Chrome Stainless

To help you convert to chrome stainless, we shall be glad to send an authoritative bulletin on the mechanical properties, corrosion resistance, weldability, etc., of these steels as compared with 18-8 stainless. Write for your copy. And remember that the advice of Ryerson stainless specialists is always yours for the asking. We suggest you discuss your chrome stainless problems with us.

*National Warehouse Distributor of Allegheny Stainless in All Types, Shapes and Sizes*

# RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CINCINNATI • CLEVELAND  
DETROIT • PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO  
SPOKANE • SEATTLE

# AMERICAN ARTISAN

## ARE THOSE DAYS GONE?

If there is one subject in which we are finding general agreement at all levels of the industry, it is that the days of "come and take it if we've got it" selling are over. Because now we've got it and there's no great rush to come and take it.

The material supply situation seems to be over the hump so much so that in many materials we expect decontrol. True, in several others such as copper, there will probably be tightness and controls as long as defense needs stay at high levels. But in many kinds of steel and in aluminum, our industry is having no real difficulties, and what difficulties there are look minor by the third and fourth quarter. So, as we say, we've got it.

Throughout all industries and lines there has been noticeable for some time a disposition on the part of the buying public to think a little before it buys and to weigh values. There is plenty of money to spend, apparently, but the string around the bank roll is not coming off so readily and quickly as has been the case in recent years.

Demand for housing is still great — perhaps one million starts this year against an earlier estimate of 800,000 — but here again it is no longer a matter of acutely short supply against a large and hungry demand.

We have an industry, production wise, expanded to serve a huge demand. We have an industry, distribution wise, that has moved that production into consumption. If there's less demand of a backlog and shortage nature, then production and distribution organizations have to replace it with stimulated demand. This results from creating a desire for our products and services in preference to other products and services.

In short, selling of the highest order at all industry levels is the solution on which there is also general agreement. New developments, such as summer cooling, are

another solution to the problem of maintaining and expanding volume.

We think, too, in these days of inflated value there must be every effort to give more of that old dollar's worth in service and equipment. That is most important in establishing both interest and confidence with the customer.

This is in no sense a prediction of bad news in business. It's a realistic acceptance of inevitable changes in supply and demand, always an economic phenomenon which is basic. It behooves every business man in this industry to face it, plan for it and do something intelligent about it in his own self interest.

### INTRODUCING . . .

The publishers of AMERICAN ARTISAN introduce to our readers with this issue a new editor, Clyde M. Barnes. Mr. Barnes will come to be known to many of you personally, more of you through correspondence and all of you indirectly through the editorial content he will provide for you. He has been closely identified with the design installation and servicing of heating, ventilating, and air conditioning since he left school in 1932 with a B. S. degree in mechanical engineering.

He has had the practical experience of installing and servicing the equipment and systems of our industry. He has developed the qualifications for editorship of AMERICAN ARTISAN through instruction and direction of student training in heating, ventilating, and air conditioning since 1938. He has written, taught and lectured on these subjects. He will now translate that background and experience into reader service — AMERICAN ARTISAN reader service.

On his staff are H. Louis Purdy, associate editor, and M. Helen Sieveking, editorial assistant.

# Restaurant Modernization With Stainless Steel

ERNEST E. ZIDECK

New Orleans, La.

Stainless steel sheets used as wall linings and special build-ups have been used effectively in restaurants. As security against vermin and kitchen odors, as well as to improve and modernize the premises, sheet stainless has proved highly successful.

**T**RAVELLERS WHO EAT in roadside lunch rooms and restaurants are finding an increasing number of stainless steel linings on the walls behind the stoves and in front of the customer. These linings hide the former ugly, verminfested woodwork or creviced masonry. These restaurant modernizations, usually lunch counters behind which cooking is done, have spread to a surprising degree all over the country. They are especially

numerous in towns and cities along the Gulf Coast, where the milder climate induces the breeding of a variety of creeping vermin the year around. Kitchens are especially favored by the bugs, and it is not uncommon to see them crawling on walls and ceilings behind and above the stoves, frequently falling into the utensils, or appearing on the counter where the customers' meals invite them.

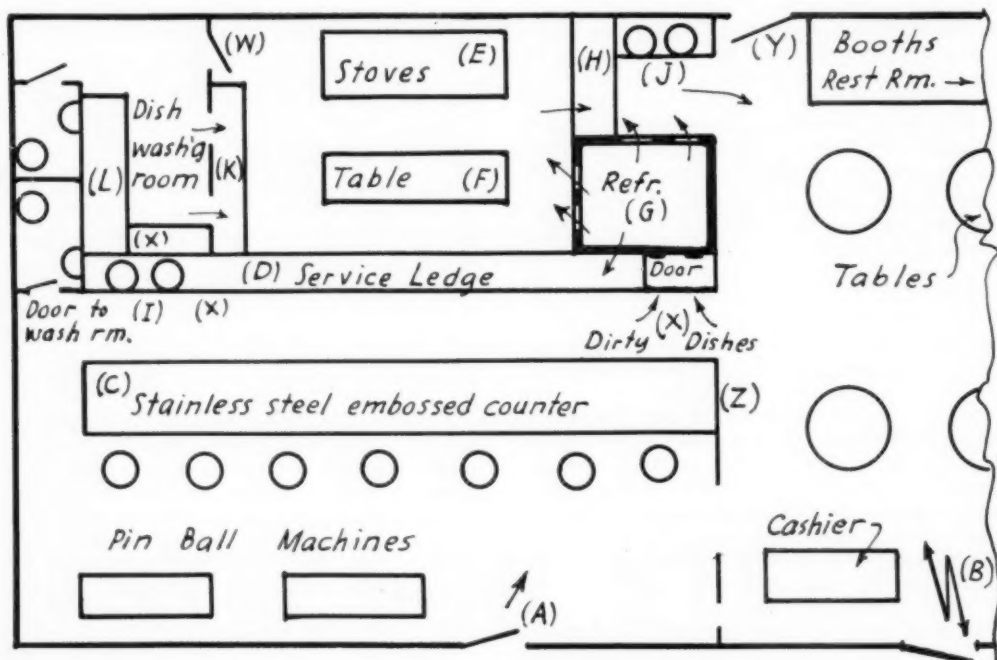


Fig. 1

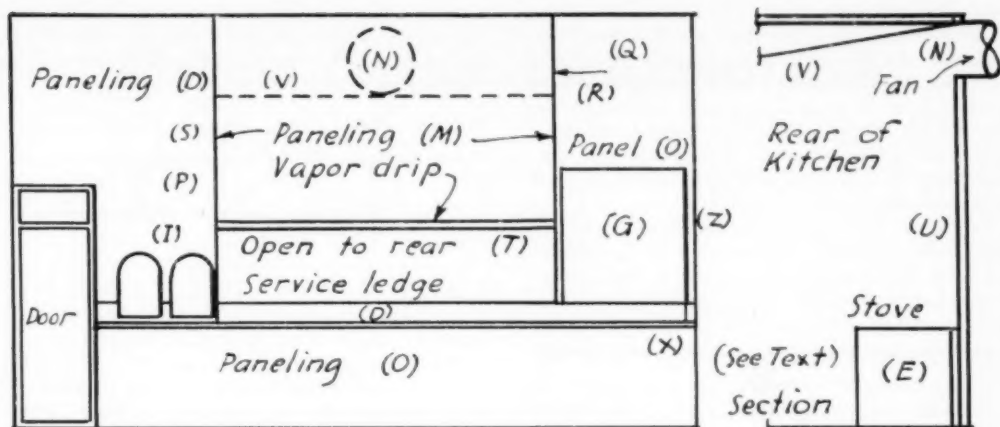


Fig. 2

Lunchrooms and restaurants are springing up at street intersections, near railroad and bus depots, and gasoline stations. There is no lack of customers, but it is obvious that travellers will flock to a new place, hoping to find it clean and free of insects, while they shun the old places. The increasing number of new or modernized eating places are forcing the unsanitary and vermin-infested locations out of business. This is seen more along the highways, but it applies as well to restaurants in towns and cities.

The proprietors of these restaurants have made an attempt to combat the pests and the odors. This is evident to anyone who frequents these eating places and sees the quantity of stainless steel sheets which have been converted to linings and build-ups behind the counters, as well as the fans which have been installed to eliminate kitchen odors. While there are many well planned and well executed installations of this sort, most of them have been done in a haphazard fashion, with the main object being, apparently, to dazzle the customer with the shining metal and lead him to believe that everything is spotless in the place. In all too many cases, however, no effort has been made to exterminate the bugs, nor to arrange for an effective means of dissipation of kitchen odors to the outside of the building. Sometimes the metal sheets were left to bulge, showing unsightly seams, and often reflecting lights and heat into the customers' eyes. Walls and ceilings above the stoves were left in their former condition, without protection against vermin and dirt falling from them into the food. In several cases, the installers tried to prevent the metal linings from bulging by providing crossing ribs in the sheets, presenting a sorry sight.

Here the installer has not had an easy job. The sheets or strips of metal will not simply hang in place without support. They must be somehow fastened to walls, woodwork, or masonry, and they must be joined. A pleasing exterior is important in this location, and

unsightly joints or nails or screws protruding through the metal sheets are taboo. Furthermore, contraction and expansion of the metal under varying temperatures causes sheets which have been fastened by nails or screws to wood or masonry to lose their original smooth appearance. Sharp metal edges are dangerous in locations where people eat, or where they may come in contact with the metal while waiting on customers or handling food in the kitchen. These particulars must be considered in the installation of a metal lining or metal embossing job which must be satisfactory not only to the proprietor, but especially to those who eat and work in the place.

An example of a restaurant modernization by stainless steel lining and build-up is presented in the accompanying illustrations. This restaurant is located in a Gulf city, where bugs of various kinds are prevalent the year around. The room, shown in Fig. 1, is 60 ft long by 30 ft deep, divided by a middle wall into two equal halves, the one to the left in the picture serving as lunch room and kitchen, the other being a regular dining room. From floor to ceiling the distance is 12 ft. The modernization was not confined to the stainless steel work alone, but an effective exhaust fan was also installed in the kitchen, the dining room was air conditioned, and other innovations were introduced, including a conveyor belt for moving used dishes from the dining room to an enclosed dish washing room.

In Fig. 1, *A* is an entrance door from the street, but not an exit. Customers must pass the cashier on their way out through door *B* which opens both ways. The customary round stools stand in front of the lunch room counter, *C*. The counter has a fibre-like top which is held by metal strips along the edges, as shown in Fig. 7. A 20 in. wide ledge, *D*, extends into the kitchen, and is used for placing meals upon it for the waitress to pick up. A battery of stoves, *E*, is used in the kitchen, and a metal-lined table, *F*, is used for the preparation of meals. The refrigerator, *G*, has three-way opening



doors, the cook getting meat from his side, the dining room waitresses getting iced food and beverages from their side, and the lunch counter waitress getting hers from her side of the unit. On a hinged, metal-lined service bar, *H*, the cooks deposit meals destined for the dining room. Coffee and hot urns, *I*, and *I*, are within easy reach of the waitresses. A metal ledge, *K*, protrudes into the kitchen for stacking clean dishes washed in the enclosed room, *L*.

In Fig. 2, sheet metal lining is indicated extending from floor to ceiling. The central wall, *Z*, separates the lunch room and the kitchen from the dining room. Metal paneling, *M*, extends from *T* upward to the ceiling. The fan housing, *N*, is indicated by broken lines. The

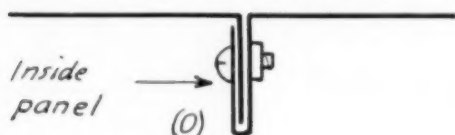


Fig. 3

metal lining, *O*, extends from the floor to the top of the counter, *C*, below the ledge, *D*. A metal wall, *P*, separates the washroom, *L*, from the kitchen, and *Q* is a similar wall above the refrigerator. The frontal wall, *S*, hides the washroom, *L*, and *R* is the frontal wall above the refrigerator, *G*. In the sectional view at the right, Fig. 2, *U* is the lining over the masonry behind the stoves, *E*, and *V* is a sloping false ceiling between *P* and *Q* to the frontal, *M*.

In Fig. 1, *W* indicates a door into the washroom and adjoining employees toilet, with *Y* showing the delivery door in the rear of the building. At the right in this drawing, *X* is a lid on hinges over the conveyor, *X-X*, where used dishes are deposited for arrival at *X* in the washroom. The conveyor operates under the service ledge, *D*, and is accessible from the kitchen.

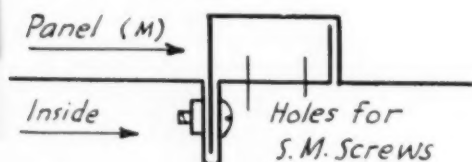


Fig. 4

Viewed from the counter, *C*, only the large opening, *T*, for serving, the upper part of the refrigerator, *G*, and the door the customers' washroom is without artificial build-ups of stainless steel. The area *M* is 14 ft by 7 ft high; that of *S* is 9 x 11 ft; of *O*, 3 x 27 ft, and of the false ceiling *V*, 14 x 14 ft. The panels, *P*, *Q*, and *R* are also quite large, so that piecing together is necessary. While the panel *O*, hidden from view by the counter, *C*, could be made of seamed together sheets, it would not lend the panel the stiffness which it requires, standing by itself, with no wood or other wall behind it. In the present job, the long panel, *O*, is made up from

2 ft wide sheets, 6 ft long, braked to form also the bottom for the conveyor, *X-X*, and with 1 1/4 in. standing seam to the inside, so that there is stiffness to the panel, while its face remains smooth.

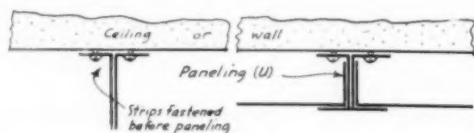


Fig. 5

The standing seam used is shown in Fig. 3. The large panel, *M*, is made of 2 ft wide sheets formed as shown in Fig. 4, with double means of stiffening, resulting in the middle panel having vertically running bands about 20 in. apart, a kind of ornamentation. All other vertical panels, *P*, *Q*, *R*, and *S*, are accessible for work on the inside, having interior standing seam, Fig. 3, bolted 12 in. apart, as indicated.

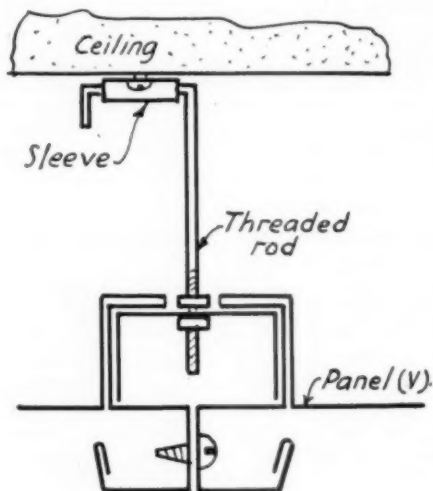


Fig. 6

The rear panel, *U*, required to fasten to masonry without showing the fastening by nails or bolts and surface disfiguration, is also made up of 2 ft wide sheets, except that the upbends remain loose, and narrow strips of soft material (lead or copper) fastened to the masonry beforehand, protrude outward between them and are bent over them, as shown in Fig. 5. The ceiling panel, *V* is constructed of strips and channels, as shown in Fig. 6. All panels accessible for work from the rear (unexposed face) are made of strips and have bolted standing seams, as shown in Fig. 3. Crosswise (horizontally running) connections are similarly treated. Where embossing is called for, as on the counter, *C*, the construction is like

(Please turn to page 136)

# Making Ourselves Acceptable

## Part V

W. FRANK WELCH

Fort Wayne, Ind.

**T**HE SALES FORCE is a personal factor in impressing a firm's name and reputation upon the public and becomes a living advertisement for a business.

During the war years, there were many classical examples of personal indifference. All of us can remember the general attitude of sales people in stores and on the road during the period when goods were scarce. There were exceptions of course, but in too many cases it was a case of take it or leave it. That era is past. Sales people now must sell again. We are no longer in a seller's market, and competition has become an important business consideration.

Nowadays, a take-it-or-leave-it attitude will send a customer to the competitor where he can get the courteous, intelligent treatment which he has a right to expect.

### **Salesmen as good will builders**

A good sales person can do wonders towards building good will for a business. He can tremendously enhance the value of your external advertising media, whether it is your newspaper space, your radio time, your outdoor posters, or other media used to impress the public in favor of your product. Courtesy is the hallmark of a good sales person.

Marshall Field tuned in on human reaction when he said that the customer is always right. Of course, the customer is not always right, but the good merchant or the good business man and his sales staff always must maintain the attitude and must start with the promise that the customer is right.

There is a sales viewpoint to the job of every executive and every employee regardless of where he fits in the picture of the business. But this is nowhere else so pertinent, and the understanding of it is nowhere else so necessary, as will salesmen themselves. Indifference, discourtesy, procrastination, half-hearted answers, lack of knowledge of their product, impertinent rejoinders, and smart-aleck attitudes are all the very antithesis of the building forces in merchandising.

The customer is always right and we are always wrong when we fail to improve our relationship with him on every contact. If a soft answer turneth away wrath, then a kindly, friendly, interesting sales conversation builds good will and makes good customer relations.

Assuming at the outset that we would not expose as

sales persons people who were not courteous, intelligent, and presentable in appearance, then what should we expect of them?

First of all, we want personal integrity. Sales representatives must reflect the integrity of the business. Secondly, thorough knowledge of the business is indispensable. If we have these two qualities, the third requirement will follow naturally. Our sales men and women must be willing and even anxious to be of real service to their customers.

Mere order takers are out, regardless of what type of business we are considering. We want salesmen who will honestly advise a customer to the customer's best advantage, even if it mean losing a sale.

I have been tremendously impressed by a salesman who has been calling on our company for more than two years now, although he hasn't sold us a thing. He is with an out-of-town firm. He drops in to see us every 30 or 60 days, whenever his schedule brings him through out town. On every occasion we learn something from him which we can apply profitably to our business. Quietly and unobtrusively, he considers our problems with us, offering helpful suggestions while at the same time knowing that we may take his comment and advice and use it to our advantage in dealing with a service that is in direct competition with his own business.

### **Give credit when it is deserved**

I like to do business so far as possible in my home town, but some day I'm going to buy something from this splendid gentleman because he fulfills completely my conception of a real salesman. He is anxious to be of service to our business. He has gained considerable prestige in the time he has been calling on us, and just as his personal reputation has risen in our opinion, so has his company.

I have a feeling of good will toward this man and his company. Whenever I see his firm's name in a printed advertisement, or hear it over the air, I immediately associate the company with this man. He has made a favorable impression on me, and, through him, his company, too, has made a favorable impression. Note how the company's advertising program is enhanced through the impression made by a salesman.

# Degree-Day Method of Estimating Fuel Consumption

## Part III

S. KONZO\*

In the first installment of this series, seasonal degree-day values were given for a number of cities in the United States and Canada. In the second installment, a new type of summary curve for degree-day values was presented, together with several practical applications of this curve. Previously, it was shown that an estimate of the fuel quantity,  $Q$ , could be determined from an equation of the following type.

$$Q = \frac{24 H N}{(t_i - t_o) (f) (e)}$$

where  $Q$  is the fuel quantity required for the season,  
 $H$  is the design calculated heat loss for the structure, in Btu per hour,  
 $(t_i - t_o)$  is the design temperature difference,  $F$ , from indoor air to outdoor air,  
 $(f)$  is the calorific, or heating value of the fuel, and  
 $(e)$  is the overall efficiency of fuel utilization.

In this present article, practical values will be presented for the terms,  $(f)$  and  $(e)$ , in the above equation.

### Heating Value for Fuels, $(f)$

a) *Electrical energy.* The heat equivalent for electrical energy is 3,413 Btu for one watt-hour, or 3413 Btu for one kilowatt-hour. When dealing with electrical energy, therefore, the value of 3413 can be substituted for the  $(f)$  term in the equation.

b) *Gas fuel.* The heating value for gaseous fuels will vary with each locality, and can usually be obtained from the local utility company in terms of Btu per cubic foot. Where the gas is billed in terms of therms, the value of 100,000 Btu per therm can be used in the equation.

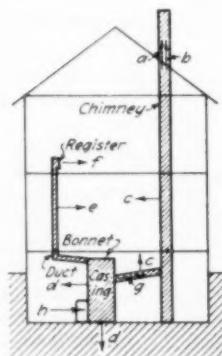
Where the gas is billed in terms of cubic feet, the heating values can be approximated from the following

table if no specific information is available locally:

	Btu cu ft
Natural gas (California) ...	1000
Natural gas (Midcontinent) ...	1000
Natural gas (Pittsburgh) ...	1100
Coal gas .....	550
Propane and Butane—see oil	

c) *Oil fuel.* The following heating values for oil are approximate:

	Btu gal
No. 1 (Commonly used for vaporizing and rotary burners) .....	135,000
No. 2 (Commonly used for domestic gun burners) ..	140,000
No. 5 (Commonly used for industrial burners with preheating) .....	150,000



a-Flue gas loss at top of chimney with no unburned combustibles  
 b-Flue gas loss due to unburned combustibles  
 c-Heat from chimney and smoke pipe  
 d-Heat from casing and to floor  
 e-Heat from ducts and stacks  
 f-Delivery at registers  
 g-Flue gas loss at smoke outlet with no unburned combustibles  
 h-Heat generated by fuel burned

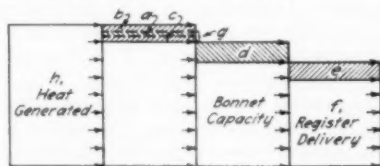


Fig. 5 Heat distribution in a warm air furnace plant.

\*Professor of Mechanical Engineering  
 University of Illinois

(Reproduced from Circular 44, University of Illinois, Eng. Exp. Sta., by Kratz, Konzo, and Thomson)

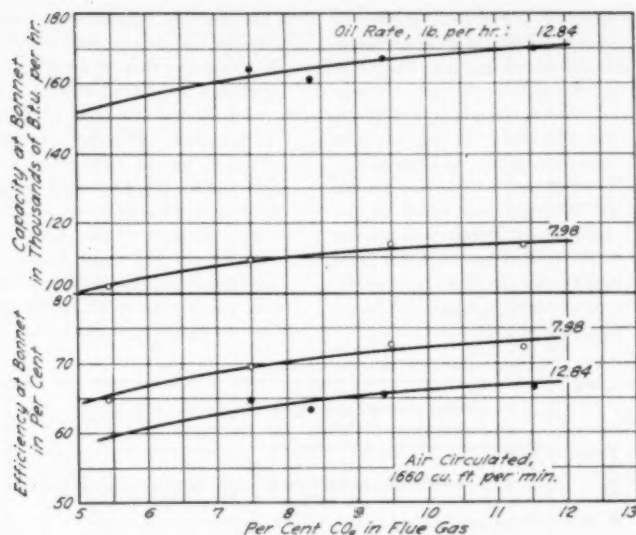


Fig. 6 Performance of oil burning furnace showing increase in efficiency with lower fuel inputs.

[Reproduced from Bulletin 318, University of Illinois, Eng. Exp. Sta., by Kratz and Konzo]

Commercial propane ..... 92,000

Commercial butane ..... 102,000

d) **Solid fuels.** The heating values for coal, coke, and lignite vary considerably depending upon the mine, the seam of coal being mined, and the extent of the cleaning process. Most coal suppliers will be able to furnish the heating value for coals being sold. Since the calorific value of coal will depend upon whether it is stated in terms of the dry basis, or the as-received basis, the heating contractor should specifically ask for the fuel value on the "as-received" basis. Where specific information is not available, the following approximations can be used:

	Btu lb
Anthracite .....	12,900
Semi-anthracite .....	13,800
Low-volatile bituminous (W.Va.) .....	14,300
Medium-volatile bituminous .....	13,800
High-volatile bituminous B (III.) .....	12,100
High-volatile bituminous C .....	10,800
Sub-bituminous B .....	9,100
Lignite .....	7,000

### Overall Efficiency of Utilization

#### (e)

The efficiency term in the equation for fuel estimation will depend upon a large number of factors which cannot always be evaluated. Nevertheless, in order to arrive at a reasonable estimate it will be necessary to utilize data from field tests. Unfortunately, reliable data are difficult to secure in spite of the large number of surveys that have been made by various investigators. The reason for this lack of data becomes apparent when it is made clear that the efficiency term we are concerned with is not necessarily the bonnet efficiency which is obtained by the manufacturer from rating tests of the furnace.

As shown in Fig 5, of the total amount of heat generated by the combustion of fuel in the furnace (item h) a substantial amount is transferred to the bonnet air, and a slightly smaller amount is delivered to the warm air register, (Item f). The heat from the chimney and smokepipe (item c), the heat from the casing (item d), and the heat from the ducts and stacks (item e) eventually enter the house. There-

fore, of the total amount of heat generated in the furnace, the only actual heat losses are those designated as (item a), the heat loss at the top of the chimney, and (item b), the heat loss due to the escape of unburned fuel. The overall efficiency of utilization, therefore, is the total percentage of the heat liberated in the furnace which is utilized in the entire house.

The following factors will affect the overall efficiency of utilization:

- High flue gas temperatures leaving the furnace and the top of the chimney will result in large flue gas losses and low overall efficiency. Normally, the flue gas temperatures from coal-fired equipment will be higher than those with oil or gas-fired equipment. In an oil-fired furnace, the use of a high input nozzle will result in higher flue gas temperatures than with a lower input nozzle. See Fig. 6. Similarly, a conversion oil- or gas-fired burner installed in an inadequately sized furnace will also result in high flue gas temperatures.
- Continuous air circulation of the blower in a forced-air system will result in general in lower average flue gas temperatures leaving the furnace.
- A chimney which is exposed on one or more sides to the outdoor air will not regain as much heat to the indoors as an inside chimney. Also a short chimney will not regain as much heat as a tall chimney.
- A furnace room exposed on one or more sides to the outdoors will not regain as much heat to the indoors as an inside furnace room. For example, a furnace room located in the garage or in the attic, will not regain as much heat as one located in the basement.
- The heat loss from ducts exposed to the attic air, or ducts exposed to a cold crawl space will not be completely regained into the living quarters.

In this discussion no separation is made between the heat loss from the upstairs rooms and the heat loss from a basement space. In other

words, a Btu is a Btu whether it appears in the living room or in the basement. We are concerned only with the total amount of heat retained in the entire structure below the ceiling level of the top floor of the structure. It is true that with a faulty heating system, one room may be at a higher temperature than another, but this is a fault in the distribution system and not in the design heat loss calculations. Hence, for the purpose of using the equation for fuel estimates, the  $H$  value for design heat loss applies to the design heat loss for the entire structure including a basement if there is one.

#### Experimental Data for Overall Efficiency

Over a long period of time in three of the research homes at the University of Illinois it has been possible to make heat balances to determine the manner in which the heat generated in the furnace was finally transferred to the outdoor air. This has been done for a variety of fuels and over a wide range of weather conditions. It is realized, of course, that these values were obtained in research homes under complete automatic temperature control and where the operation of the house was such as to conserve fuel. The efficiency values obtained from these homes can be considered as maximum values that can be obtained with good operation.

For practical purposes, it will be desirable to reduce these experimental values somewhat since the average homeowner will not be as careful in conserving heat as in the research homes. For example, in most homes, windows are not tightly locked, until the weather becomes so severe and the wind so strong that uncomfortable drafts occur. In homes equipped with storm sash, the homeowner usually does not have the sash in place at the first appearance of degree-day weather, with the result that the fuel consumption in the early part of the heating season may be higher than the degree-day values would indicate. The following summary lists the experience obtained in the Research homes.

a. *Gas fuel.* In one of the research homes, designated as Residence A, manufactured gas was burned in a conversion burner and an overall efficiency of about 90 per cent was obtained. In another residence, designated as Residence B, in which natural gas was burned the efficiency was about 84 per cent. The difference was not due to the type of gas used, but more to differences in chimney locations, type of heating surface, and house construction.

b. *Oil fuel.* In Residence A, a conversion oil burner was installed in a cast-iron furnace designed for coal and an overall efficiency of about 72 per cent was obtained. In the same residence, a furnace designed for oil combustion and which was provided with ample heating surface provided an efficiency of about 83 per cent. See Fig. 7. In Residence B an oil conversion unit provided efficiencies ranging from 72 to 82 per cent depending upon the burner.

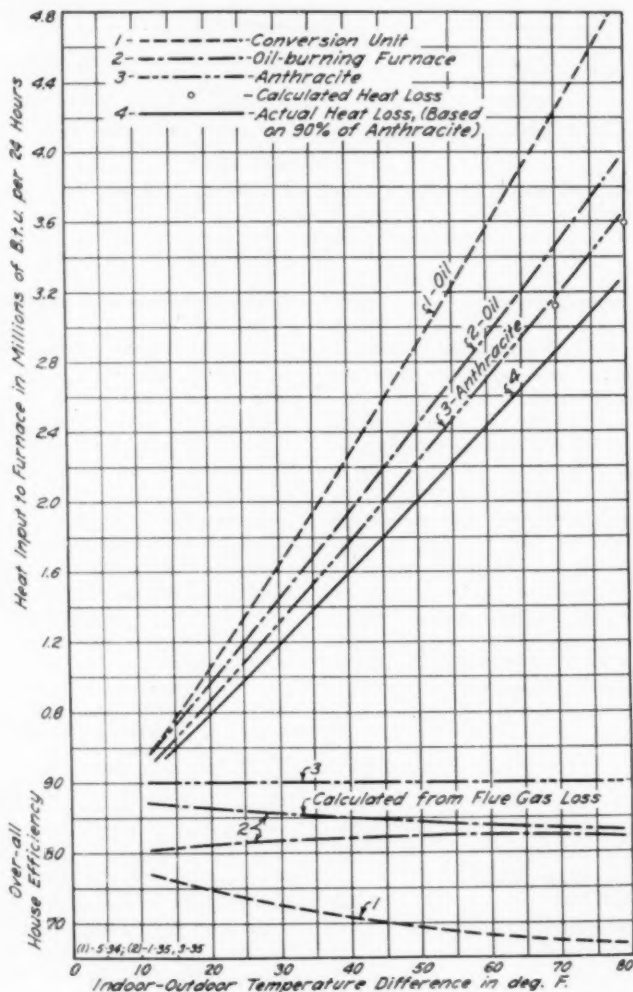


Fig. 7 Heat inputs and overall house efficiency.

[Reproduced from Bulletin 318, University of Illinois, Eng. Exp. Sta., by Kratz and Konzo]



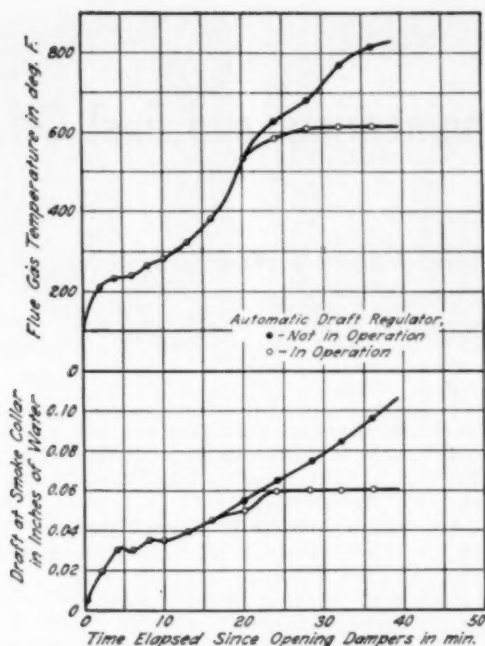


Fig. 8 Effectiveness of automatic draft regulator in limiting draft and flue gas temperature. [Reproduced from Bulletin 370, University of Illinois, Eng. Exp. Sta., by Fellows, Kretz, and Konzo]

c. *Stoker-fired operation.* In Residence A a stoker-fired furnace burning high-volatile Illinois coal gave overall efficiencies ranging from 67 to 80 per cent depending upon the rate at which the coal was fed into the furnace and the manner of air supply control. The lower values would be more representative of the type of operation normally experienced in the field.

d. *Anthracite, hand fired.* From the standpoint of the combustion engineer, a properly fired and operated anthracite fuel bed is a beautiful sight to behold. The flames can be readily modulated to the heating demand, a radiant fuel bed exists to aid in heat transfer, and the gases are easily burned to completion. In Residence A, therefore, with four hand firings per day, and with good draft control, overall efficiencies of the order of 90 per cent were obtained. See Fig. 7.

e. *Bituminous, hand fired with controls.* Due to the higher flue gas temperatures obtained with soft

coals as compared with hard coal, as well as the unavoidable losses due to unburned combustibles in the ordinary furnace, the overall efficiencies were about 73 per cent, even with four firing periods per day and with practically daily ash removal.

f. *Bituminous, hand fired without controls.* In the Research residences, tests have never been conducted without automatic temperature controls. From observations of the extremely rapid pickup in flue gas temperatures with a soft coal fuel bed when the drafts were left wide open for any appreciable length of time, it was realized that not only will the flue gas losses be excessive during these periods, but poor temperature regulation will be obtained. Furthermore, the drastic temperature range through which the furnace is operated can only lead to damage of the furnace, smokepipe and chimney. Automatic temperature controls are not only mandatory with coal firing equipment, but

soft coal fires should be additionally protected by some means to limit the maximum draft that can be imposed on the furnace. See Fig. 8.

#### Suggested Practical Values for Efficiency, (e)

With the preceding experimental data as a basis, the following practical values for the overall efficiency, (e), are suggested for use:

Case A. Where the furnace is located in the basement or in an interior utility room and where all the heat from the bonnet, ductwork, smokepipe or ventpipe, and chimney will be regained in the living spaces, both upstairs and in the basement.

#### Efficiency (e)

1. Electricity ..... 1.00
2. Gas ..... 0.80
3. Oil, burned in oil designed furnace ..... 0.80
4. Oil, burned in conversion burner ..... 0.70
5. Coal, stoker fired soft coal ..... 0.65
6. Coal, stoker fired anthracite ..... 0.80
7. Coal hand fired soft coal 0.65
8. Coal, hand fired anthracite ..... 0.80
9. Coal, hand fired, manual control ..... 0.55

(Values for items 1, 6, and 9 are estimates and not based on tests.)

Case B. Where the furnace is located in an exterior utility room (such as garage or attic space), or where the heat from the duct system is not regained in the house (such as for attic or crawl space ductwork), the above values should be reduced by 0.05 to 0.10.

These efficiency values, even when reduced to take into account normal service factors, were considerably higher than anticipated before the heat balance studies were made in the research residences. In fact, the overall utilization of heat energy can be higher in a small residential plant than in the most modern power plant. This is primarily due to the fact that heat from the smokepipe and chimney can be regained to such an extent that the flue gas temperature at the top of the house may, in some cases, be as low as 150 F.

# OHI Talks Sales, Engineering, and Fuel Oils

## Annual Convention and Exposition Make Big Week in Philadelphia

THE 29TH ANNUAL Convention of the Oil Heat Institute of America, Inc., was held at Philadelphia, April 14-18, with meetings and convention sessions at the Benjamin Franklin Hotel. At the same time, the Oil Heat Exposition was in full swing at the Commercial Museum.

It was announced that the 30th Annual Convention will be held in Chicago in April 1953, and that the next Oil Heat Exposition will be in Philadelphia, April 1954. The exposition is now on an every other year basis instead of annual.

### Crawford Re-elected President

The convention featured sessions of interest to the different divisions of the Institute, with the annual business meeting opening the week's activities. At this meeting current officers were re-elected for another year. Continuing as president will be T. A. Crawford, Timken Silent Automatic Div., Timken-Detroit Axle Co., Detroit; and as vice presidents, P. K. Addams, Fitzgibbons Boiler Co., New York, and H. Wilkinson, Herco Oil Burner Corp., Lancaster, Pa.

The Executive Committee for the year ending February 28, 1953, will be J. H. B. Albert, A. T. Atwill, R. S. Bohn, L. A. Casler, C. L. Hastings, G. E. Hochstein, and J. W. Owens.

Directors elected were:

#### Manufacturer Division

A. T. Atwill, Quaker Manufacturing Company.  
R. S. Bohn, Preferred Utilities Manufacturing Corp.  
Laverne Brennehan, York-Shipley, Inc.  
C. T. Burg, Iron Fireman Manufacturing Company.  
L. A. Casler, Eureka Williams Corp.  
Sheldon Coleman, The Coleman Company, Inc.  
T. A. Crawford, Timken Silent Automatic Div., The Timken-Detroit Axle Company.  
M. J. Donahue, Fluid Heat — Ko-Z-Aire Divisions, Anchor Post Products, Inc.  
A. C. Freimann, Delco Appliance Division, General Motors Corp.  
Rupert Gustafson, Sundstrand Engineering Company.  
George E. Hochstein, Heating Equipment Division, The Heil Company.

J. C. Johnson, S. T. Johnson Company.  
W. F. Klockau, The Nu-Way Corp.  
G. M. Marin, Sun-Ray Burner Manufacturing Corp.  
F. J. VanPoppelen, Automatic Heating Division, General Electric Company.  
Claude A. Potts, U. S. Machine Corp.  
J. Verne Resek, Burner Division, Cleaver-Brooks Company.  
W. J. Smith, Jr., Toridheet Division, Cleveland Steel Products Corp.  
Russell C. Westover, Jr., Ray Oil Burner Company.  
H. H. Wilkinson, Herco Oil Burner Corp.

#### Accessory Division

P. K. Addams, Fitzgibbons Boiler Company, Inc.  
T. I. Byrd, Lau Blower Company.  
Stanley Czarnecki, Eddington Metal Specialty Company.  
E. J. Gossett, Bell & Gossett Company.  
Robert Gray, Fuel Oil & Oil Heat.  
C. L. Hastings, Rochester Manufacturing Company.  
C. E. Lewis, Perfex Corporation.  
S. A. Loeb, Webster Electric Company.  
E. N. McDonnell, McDonnell & Miller, Inc.  
B. F. Olson, Sundstrand Machine Tool Company.  
J. W. Owens, The Mercoid Corp.  
Dudley Robinson, Torrington Manufacturing Company.

#### Distribution Division

J. H. B. Albert, OHI of Maryland, Inc.  
F. N. Beckwith, OHI of New England.  
J. A. Collins, Oil-Heat Ass'n. of Western New York.  
Alfred Hegeman, Wisconsin Oil-Heat Ass'n., Inc.  
C. R. Johnswald, Burning Oil Distributors Association.  
T. R. Louizeux, Union County, N.J., Oil Heat Association.  
J. A. MacDougall, Oil Heat & Oil Heat Dealers Division, Electrical Ass'n. of Philadelphia.  
F. F. Marguard, OHI of Northern Ohio.  
S. Partridge, Oregon Heating Industries.  
R. D. Rankin, Sr., Missouri-Kansas OHI.  
J. J. Walsh, OHI of Rochester, Inc.  
G. H. Wolf, Jr., Oil-Heat Ass'n. Central Pennsylvania.

At the various division sessions, the subject of selling, engineering and fuel oil specifications got the greatest attention.



Moderator of Industry Session, member OHI Executive Committee and chairman of Public Relations Committee. L. A. Casler, Exec. V. P., Eureka-Williams Corp.



He will head up OHI again this year. T. A. Crawford, vice president, Timken Silent Automatic Division, Timken-Detroit Axle Co., Detroit, Michigan.



L. N. Hunter, vice president in charge of research, National Radiator Co. Chairman of OHI's Engineering Committee. Conducted the Engineering Session.

### **Selling**

The dealer's viewpoint on selling was presented by J. E. Rowland, oil burner dealer of Philadelphia. Mr. Rowland traced the history of oilburner sales in Philadelphia which showed that, since the war, annual sales have increased very little over those of pre-war years. While sales have not increased, the number of dealers has grown, Mr. Rowland pointed out, and also, the public has become gas conscious, with the result that the dealer has many competitive problems. He felt that the manufacturer must help meet the competition of off-brand burners, must improve the product and must do more than the kind of consumer advertising that produces inquiries from names which are no more valuable to the dealer than those he could pick out of a telephone book. Mr. Rowland also deplored what he called the straddling of the fence by manufacturers who make both oil and gas equipment.

President Crawford replied from the manufacturers' point of view. He pointed out that the manufacturers have designed their products for public acceptance, have worked with the Underwriters' Laboratory, have worked with the government on material restrictions and have endeavored in such ways to help the industry as a whole. He felt that the oil producers, who get the large share of the over-all oil heat dollar, could do more to create acceptance and demand for oil heating. His opinion was that the industry is now at a point where materials are available and where many restrictions of the past several years are removed, so that the big need is to sell. He believed that the manufacturers had the right to expect dealers to upgrade their selling, with the employment of good salesmen and with the kind of creative drive that in past years captured the heating market from coal. He particularly believed that the first line of defense against gas was to keep oil in where old oil burners were reaching the stage of replacement.

### **Materials Controls**

Throughout the meeting the necessity for selling in

today's economy was stressed in talks of various speakers and in panel sessions in which all members participated. It was made more significant by the report of Paul Holmes, NPA, in which he explained that there has been a change in the materials outlook. Whereas, earlier, deep cuts in business' use of raw materials seemed necessary, we now appear to have passed the low point in supply. Sheet and strip steel are easier. So is aluminum. In copper there is some improvement, but it is still tight.

Mr. Holmes pointed out that controls are still necessary because there is still a substantial percentage of all materials required in the defense program, but in later questioning he stated his belief that there will be decontrols in several lines before the end of the year. He stated that all signs point to a high level of construction in 1952, with probably one million housing starts and a large volume of military construction.

### **Engineering**

The engineering session was conducted by L. N. Hunter, National Radiator Co., chairman of OHI Engineering Committee. Four papers were presented, one on Storage and Handling Fuel Oil, by E. C. Webb, Iron Fireman Manufacturing Co. Mr. Webb discussed pour point and viscosity of oils, primarily in the No. 5 and No. 6 grades, explained preheating requirements and the problems in starting up after an extended shutdown period during cold weather. He recommended that the purchaser of a heavy fuel oil handling system specify the commercial standard grade of oil that is to be used, the pour point limitations if No. 5 oil is used, and the viscosity limitations if other than those specified for the commercial standard grade. This would avoid misunderstandings and provide a correct basis for cost comparisons. He should also decide whether facilities will be provided for starting up the system after a shutdown.

J. Verne Resek, Cleaver-Brooks Co., made a strong plea for new specifications for fuel oil for commercial and industrial burners, since the present specifications for such oils can not be used to define the fuel oil to be

(Please turn to page 150)



Six drug production booths, each individually ventilated with its own exhaust system. Blowout construction is used for all outside walls.

## Ventilating for Safety In Pharmaceutical Research Laboratory

Safety for those working in experimental research laboratory has been given prime consideration in this article by Frank L. Bonem. The supply air is introduced by two 10,000 cfm blowers to provide a blanket of moving air across the open face of the work rooms, this prevents any outward flow of fumes other than through the exhaust system.

TO INSURE SAFE and efficient preparation of drugs for medical research, a new laboratory complete with an automatic air handling system, explosion proof devices, and "blowout" type walls to protect lives and equipment has recently been completed and placed in operation by the Wm. S. Merrell Co., Cincinnati, one of the oldest U.S. pharmaceutical houses.

The building was designed by chemists L. Allen and M. G. Van Campen, Jr., together with Merrell engineer Rowland Kleine. The consulting engineers were Harold N. Hermann & Associates. The ventilation contractor was Henry Niemes, Inc. The general contractor was Frank Messer & Sons, Inc.

The U-shaped building is divided into two main parts — the administration and production areas. The administrative area houses the of-

fices, raw material and finished product storage, and such service equipment as vacuum pumps, condensate return pumps, water heater, pressure reducing stations to keep plant steam and water supply at constant pressure, and two air handling units which are located on the outside, between the wings, but adjacent to the main building.

### Six Work Booths for Each Production Wing

The experimental production area consists of two parallel wings, each housing six work booths. Isolation of the wings from the main building is assured by a thick concrete block wall. The wings are isolated from each other by walls and a 16 ft space.

The 12 booths or cubicles in which the actual chemical reactions

for drug production are carried on are each 5 ft deep and 5 ft wide. They are equipped with steam, compressed air, vacuum and distilled water lines, and electrical outlets. There is also a flexible 8 in. exhaust duct for direct application to working equipment.

A safety feature of these booths is their location and the construction of the outer walls. The booths are located on that side of each wing which is away from the other wing, and their outside walls are made of  $\frac{1}{4}$  in. thick compressed asbestos panels, loosely fastened to the building columns. Concrete blocks form the inner walls. Due to this design, an explosion in any one work booth would blow the loose outer wall into the yard, away from any other building, and permit the gases to escape.

If an explosion should occur in one wing, production can continue in the other.

#### **Removing Explosive and Noxious Fumes**

The prime function of the ventilation system is to carry away explosive and noxious fumes, and to prevent diffusion of such gases to other production areas in the building. This is of prime importance, for not only must the health of the personnel be safeguarded and explosions prevented, but cross-contamination cannot be tolerated.

The two air handling units, each of 10,000 cfm capacity, supply 100 percent outdoor, filtered and tempered air at a rate of 1670 cfm per booth, 1100 cfm being delivered directly in front of each booth through a fan shaped outlet and 570 cfm through a ceiling type diffuser outside the booth in the service corridor.

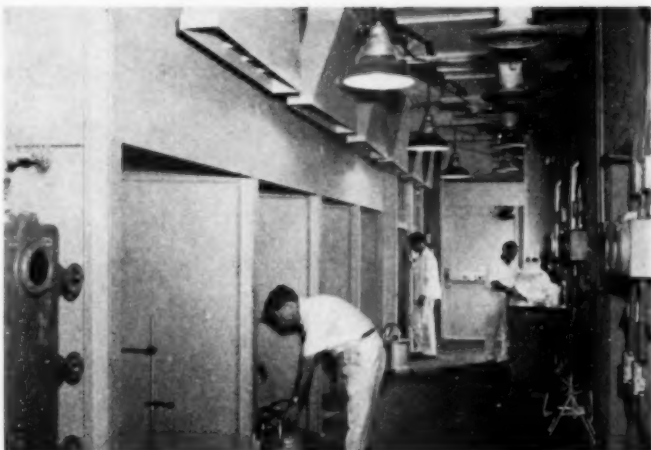
#### **Individual Exhaust System for Each Work Booth**

Each wing has its own air delivery system, which is fed by one of the two 10,000 cfm units. However, all cubicles have their own exhaust fans of above 1670 cfm capacity. These fans and their stacks are at ground level on the outsides of the booths. The 8 in. suction hose which is located in each booth is connected to the exhaust fan stack through the  $\frac{1}{4}$  in. wall.

#### **Automatic Control for Fresh Air Supply**

The air handling system is controlled automatically by pressure sensitive controls which maintain a blanket of fresh air in the corridor directly in front of each booth. Elements of the automatic system comprise electric motor controlled dampers in the air supply units and in the junction of the main and branch ducts in front of each booth, static pressure controls, and single multipurpose switches in each of the booths. Closing one of these switches in any of the booths will, in sequence, cause (1) the exhaust fan for that particular booth, and at least one other fan if no other booths are in use, to turn on; (2) open dampers in the ducts to direct air to the proper booth; and (3) start the motor in the supply unit if it is not already in operation.

Starting the exhaust fan first pro-



A blanket of air is supplied through the fan shaped outlets directly above opening of cubicle. Service corridor is supplied by ceiling diffusers.



Tempering and cleaning 10,000 cfm of outside air for each laboratory wing is accomplished by each of the conditioners shown in the machinery room.

duces a slightly negative pressure in the booth. Consequently, when the supply fan is turned on, the supply air is sucked into the booth, thereby forming a curtain of air in front of it and preventing escape of fumes or gases.

The static pressure controls sense the drop in pressure when an exhaust fan is turned on and will actuate motors that control the dampers in the main supply unit. Therefore, as additional booths are placed in operation and exhaust fans turned on, the resulting pressure drop will cause an increased supply from the main unit. Conversely, as a booth — and, therefore, the exhaust fan — is shut down, the pressure rise is

sensed by the controls and dampers will close in the main unit to curtail the overall air supply to the whole wing. Thus, a constant positive air supply is at all times flowing from the outlets in front of the booths and in the corridor into the work areas and out to the atmosphere.

The supply air is filtered and tempered, as was mentioned, steam coils being used in the two 10,000 cfm units. Because the outdoor air make-up is 100 percent and a positive flow of air outward is assured at all times, humidification was felt to be unnecessary. To carry the additional heating load in winter, unit heaters are located at appropriate intervals in the two wings.





Overhead signs are illuminated after dark to attract additional attention of motorists passing the store's location at night.

## Prestige Value of an Attractive Plant

ROBERT F. WELCH

Venice, Calif.

**Quality service, a basic factor in building a firm's reputation, can be enhanced by an attractive plant establishment. This West Coast dealer has increased his community prestige by locating in a handsome building, adding further distinction to his well established name.**

**W**HAT'S THE BEST method for an *Indoor Comfort* dealer to use in building a lasting reputation for reliability and quality workmanship? Obviously, any efforts along this line must be predicated upon the fact that the individual shop is capable of delivering the best that the heating and sheet metal industry has to offer. Usually this ability is regarded as sufficient in itself. But it takes years of consistent top notch service to establish the good will which every business needs for its lasting success.

Some heating and sheet metal contractors accomplish their goal by extensive advertising which makes the company name a household word throughout the community. Others gain an enviable reputation by active participation in civic affairs or service clubs.

A method which has turned out to be most effective by Wagner Sheet Metal Company, Sacramento, Calif., was to move into a handsome building which speaks

for itself. Anyone who catches a glimpse of the establishment immediately assumes that here is a firm which can be relied upon to deliver the best heating and sheet metal work possible. The building alone is not the final answer, of course; it is merely a means to an end. The Wagner organization has been performing high quality work for the past twenty-eight years. Moving into a handsome structure five years ago served to cement and enhance this reputation.

The comparatively new building is designed in line with the most modern concepts. It is built of red brick with a striking corner showroom, two sides of which are completely exposed to view by full length glass windows. The structure measures 140 x 80 ft overall. While the immediate impression is one of tremendous eye appeal, at the same time careful planning has resulted in efficient shop and office operation.

Partner and general manager Robert G. Thomas states that one reason for investing in this type of build-

ing was the firm's desire to show its confidence in the future of the community. Over a period of nearly thirty-years, the company has become an integral part of the city. Too often, of course, such a background means nothing to a contractor. He is content to earn a good living from the community without putting anything back into it.

#### **Employee morale builder**

"There are many sideline advantages resulting from a good headquarters establishment," Thomas contends. For example, we've noticed a definite improvement in employee morale since we've moved into this place. Mechanics actually feel that better work is expected of them. Providing every possible facility for their convenience has helped us along this line.

"We get a certain amount of drop-in trade for furnace filters and heating installations which we would not otherwise have. Casual shoppers hardly account for enough volume to warrant such an investment, however.



This corner of the attractive Wagner plant indicates the light and air which are typical of the entire structure. Note the shrubbery planted at the base of the showroom windows.

A more intangible benefit is the additional prestige we enjoy. Builders and home owners naturally place more confidence in a business which obviously plans to continue its operations for many years to come."

Office area is adjacent to the attractive showroom in the front of the structure. There are desks for clerical personnel separated from the display area by a service counter. Private offices are provided for Thomas and his partner, Fred Bartig.

Operating efficiency has been stepped up by giving every journeyman a bench along one of the outside walls of the shop. Tools are placed in the center of the shop area so that materials on which the men are working need not be carried more than a minimum distance. There is no necessity for dragging heavy pieces of sheet metal the length of the shop to reach a brake or forming machine. With the exception of a 10 ft electric power shear, tools are not anchored to the concrete floor.

#### **Efficient operation pays off**

The company deals in building specialties as well as heating, air conditioning, and conventional sheet metal



Because of the extensive window area, the inside display space doubles its usefulness to serve as window dressing. The various units on display are equally visible from the outside.

work. Robert Thomas points out that a tight and efficient shop operation is a prerequisite in order to make specialty lines pay off. Such items as movable steel partitions, rolling steel doors, and metal toilet partitions are bid on whenever they are indicated in the specifications. The company also handles several lines of heating and air conditioning units, so they are able to fill demands for either luxury or economy type installations.

During the slack winter season, stock such as gutters and duct work is fabricated ahead of actual demand. This makes it possible to keep the payroll at a constant level and avoid a shortage of manpower when volume picks up. Stock held for future installation is stored on the mezzanine floor above the shop area.

Two salesmen, one a mechanical engineer, are constantly at work making contacts in the field for new business. One of them covers a territory including northern California and western Nevada for a year-round air conditioning line handled by the company. Thomas also spends a portion of his own time in personal contact with architects and builders.



Work benches situated on either side of the shop quarters, with tools located in the center, are available to the workmen at all times.



An average of 150 telephone calls each working day enter this 5-trunk switchboard at L. C. Kohlman, Inc. The classified telephone directory, an effective advertising medium, is responsible for the increasing sales volume of this Chicago air conditioning contractor.

## Directory Advertising Pays Off

**Classified telephone directory advertising keeps this Chicago air conditioning firm in the public eye. Proof is shown by a 10 per cent annual increase in gross business for the past 17 years.**

**H**OW MANY TIMES a day does your telephone ring? Have you considered telephone traffic as an index of business volume? As a direct line of communication between your firm and your customers? Many contractors overlook completely the potentialities of the telephone as a business builder. Many overlook the fact that by encouraging telephone traffic they encourage an increasing sales volume. The two are interdependent today; more telephone calls, more business.

This article describes how one enterprising Chicago contractor concentrated on the telephone as a potential sales producer and made it pay.

L. C. Kohlman, Inc., has found the classified telephone directory an effective advertising medium in building telephone traffic. While other media has proved effective from time to time, adequate listings in the local directory have contributed materially to steady expansion in business volume.

The success of this promotional theory is revealed by the fact that since 1935, when L. C. Kohlman, president, organized his company, his business has expanded steadily each year.

At first, residential contracting was the firm's major activity, but today the company deals almost exclusively in handling commercial, industrial, and institutional applications. Air conditioning accounts for more than half the total dollar volume, which has increased on an average of 10 per cent each year since 1935.

"In those 17 years", says Kohlman, "we have made about 5,580 installations of all types, and each job added to our knowledge of just what helps to put business on the books. Experience tells us that there is no substitute

for the favorable word of mouth recommendation of a satisfied customer. It has also taught us that in our kind of business, advertising must be on a year round basis."

The Kohlman firm is represented under six separate headings in the Chicago classified telephone directory. A maximum quarter-page display advertisement under the heading "Air Conditioning Contractors" reflects the company's biggest sales emphasis. An eye-catching bold face type is reserved for the firm's name in the advertisement, which also includes the General Electric trade mark and the statement, "We Do The Complete Job." Kohlman is also listed as one of the only two franchised contractors in an in-column ad beneath the G-E trade mark.

### **Small in-column ads effective in producing results**

To increase the potentialities of its coverage, the company maintains half-inch in-column ads under its own name under the classifications "Refrigeration Equipment-Commercial", "Heating Contractors", and "Ventilating Contractors", besides a one-inch in-column ad under "Refrigerators & Freezers-Servicing" and a standard listing under "Refrigerators & Freezers".

"This variety of ads and listings is working for us 365 days a year in the big metropolitan market," states Kohlman, "and our air conditioning display ad particularly has been the source of much business. We know this because as often as possible we ask each caller how he happened to call us.

"Many times we'll get a call from a prospect who will request a price estimate over the telephone. Very politely we'll tell him that this cannot be done, that our price



The Chicago headquarters of L. C. Kohlman, Inc., dealers in air conditioning, refrigeration, heating and ventilating equipment, located at 724 W. Washington Boulevard. In the past 17 years this company has built an enviable reputation for customer service.

quotations are given only after a personal inspection of the building or office. The reason, of course, is that every job is different. You take ten per cent of the same type of jobs and the installation costs will vary 100 per cent, because of varying heights of buildings, power and water supply, and the like."

Because of this fact, all price advertising in the Kohlman advertising program is automatically ruled out. An interesting side light is revealed when we learn that the weather has much to do with the quantity of calls entering the company's 8-trunk switchboard on the first floor. The total of incoming calls, according to Kohlman, averages approximately 150 each working day. This figure includes all calls, not merely the so-called "productive" calls. The weather's influence on the volume of calls is noted by the fact that the traffic may average only about

100 calls on a bleak day in March, then shoot up to as many as 400 per day during the peak months of July and August. A seasonal increase in telephone traffic becomes evident in May and maintains an above-average level through the mild weather season to mid-October, when it again returns to its cold weather norm.

Considering the comparatively low cost rates of the medium which has proved so successful for this Chicago air conditioning contractor should give one pause to reflect. Are you taking sufficient advantage of your classified telephone directory listings? Have you considered the variety of listings under which your firm might be catalogued? This sales promotion program which has proved so adequate for the Kohlman firm could be used just as effectively, to your advantage, by this often overlooked medium.

## Miniature Duct System Wins Apprentice Training Award

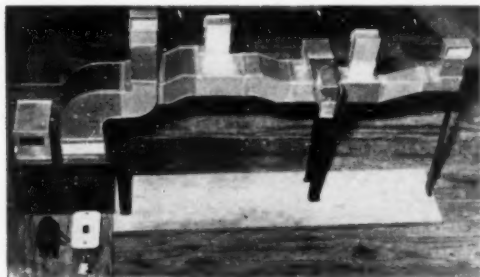


Fig. 1. Scale model of layout of a warm air heating unit. Stack heads measure  $1\frac{1}{2}$  in. wide. Bulb furnishes heat source.

The winning entry in a competition of thirty-three future craftsmen was a model layout of a warm air heating unit for small homes development, with furnace, motor, and dampers, Fig. 1.

The exhibit won first prize for Paul Sobina, a sixth term apprentice at the exhibit held on Dec. 15, 1951

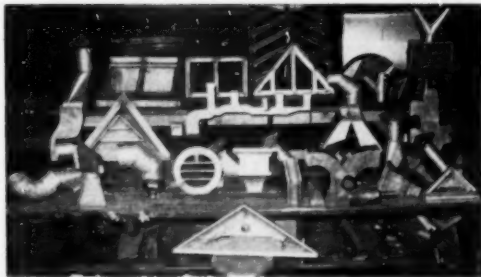


Fig. 2. Apprentice training work sponsored by Union 55, Sheet Metal Workers' International Association, Bethpage, N. Y.

at Bethpage, Long Island, N. Y. A more accurate proportion can be gauged by Fig. 2, where the unit is shown with other examples of sheet metal work entered in the competition. The furnace housing of the miniature unit contains a carbon type electric bulb which is utilized as the heat source.

## Pattern Development for

# Rectangular to Round Angular Offset Fitting

HUGH B. REID

Detroit, Mich.

IN PRESENTING a practical application for this type of fitting, a reference drawing of an installation for a suction system on a large heating furnace in the blacksmith section of a maintenance building is shown below.

Note that the furnace is located under a balcony and close to a window. The low ceiling condition caused by the balcony will result in a concentration of heat and gases in the area surrounding the furnace. This will constitute a health hazard. This condition can be alleviated by installing window louvers to supply outside air and installing an adequate exhaust system.

### Intake louvers near hood

The fresh air intake louvers should be positioned on the window and as close to the exhaust hood as possible. This will permit the exhaust fan to draw an air supply from the outside of the building, thus conserving the conditioned air produced by the heating and ventilating system in the building. An air space should be allowed between the furnace outlet vent and the hood, permitting some building air to be induced into the exhaust stack. This will result in a temperature drop in the stack and will protect the fan bearings from excessive heat. It is also recommended that the stack fan be installed as far as possible from the source of heat as this will cause an

additional temperature drop. The drawing indicates the position of the fan immediately above the roof parapet which is convenient for installation and maintenance. A push button control located inside the building for convenient operation will assure the system being regulated according to requirements. Air volume, velocity, stack diameter, and fan and motor size are determined by the amount and type of fuel being consumed per hour.

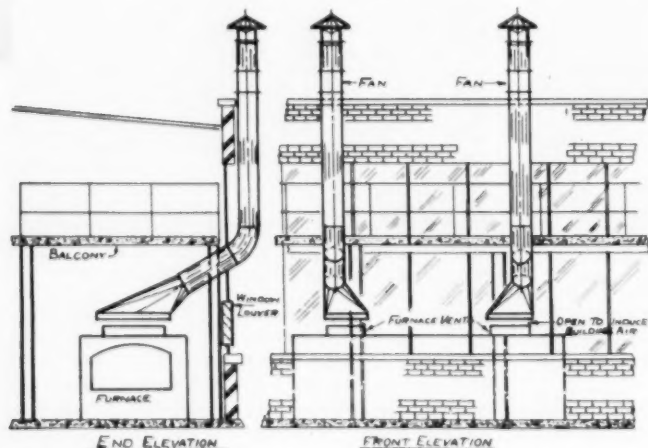
The simplified method for the pattern layout in this type of problem can be analyzed by considering the relationship of lines  $WX$  and  $YZ$  to the center line of the round pipe on the end view. Thus, lines drawn from points  $W$  and  $X$  to point  $I$  on the round pipe will be longer than the corresponding lines drawn from points  $YZ$  to point  $I$  on the round pipe; the obvious reason being that the center line of the round pipe is  $1\frac{3}{8}$  in. from line  $WX$  and  $\frac{5}{8}$  in. from line  $YZ$ .

### Detailed Solution of the Problem

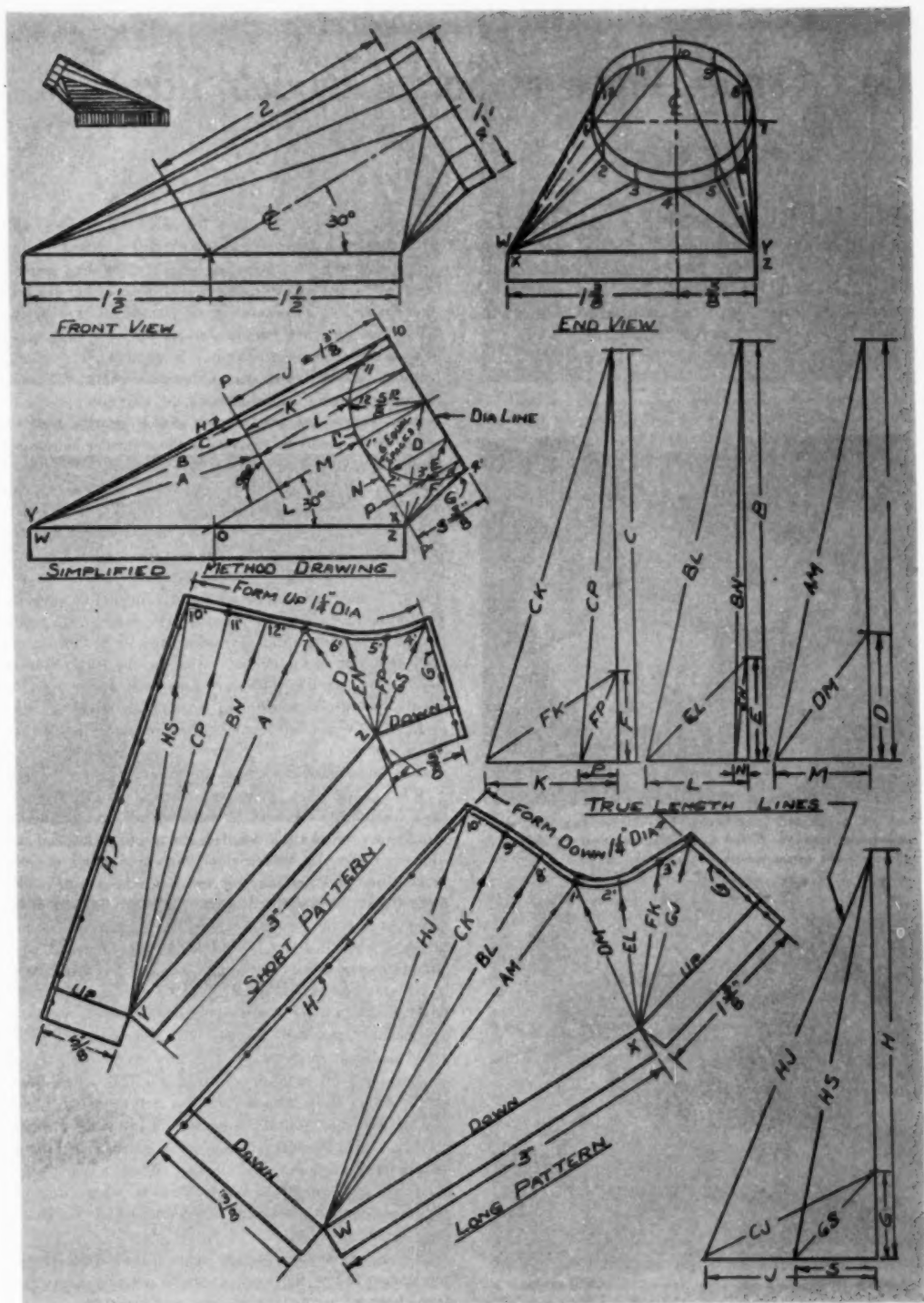
#### To Construct the Simplified Method Drawing:

- (1) Draw the horizontal line  $WX$ . From  $W$  measure  $1\frac{1}{2}$  in. and establish the point  $O$ , and through this point draw a line at 30 deg to line  $WX$ .
- (2) From  $O$  measure 2 in. and mark the point  $R$ . Through  $R$  draw a line perpendicular to the center line, from point  $R$  as center and radius  $\frac{5}{8}$  in. draw a half circle, divide the half circle into six equal spaces, and through the points draw lines perpendicular to and intersecting the  $1\frac{1}{4}$  in. diameter line.
- (3) From points  $W$  and  $X$  draw lines to the intersection points on the diameter line as indicated by letters  $A, B, C, H, D, E, F, G$ .
- (4) From the diameter line measure  $1\frac{3}{8}$  in. and draw the line  $PL$ . Mark the distances from this line to the quarter circle  $M, L, K, J$ , as shown. Note: The  $1\frac{3}{8}$  in. dimension is the distance from line

(Please turn to page 123)







# Cost Control Problems Solved by Job Tickets

Increasing operation and labor costs cut plant profits. Precise control of individual operations by use of job tickets serves as accurate check. This plant has cut paper work and increased profits while making close estimates of individual job operations.



Each job begins with a conference between Redding Sims, president (right) and W. S. DeVaughn, vice president, to determine procedure, and eliminate further paper work.



DeVaughn checks specifications and blueprints. Separate job tickets are made up for individual operations, with breakdown of each job.

THE COST of doing business is now at an all-time high. One contractor bitterly reported recently, "It takes more merely to pay my taxes now than I took in from all sources twelve years ago. And I wasn't doing badly then." Unless a constant check is kept on the cost of every job, on every minute worked and every bolt used, it's easy to come out with no net profit at all — and, without proper figures for guidance, to repeat the same error in figuring an estimate on the next job.

How can an *Indoor Comfort* dealer get this kind of exact, to-the-penny cost control without further increasing expenses by the installation of elaborate accounting systems which demand more employees and more paper work? The National Blow Pipe and Manufacturing Co., New Orleans, a shop specializing in large installations of blower and ventilation systems fabricated in its own sheet metal shop, has worked out such a system. It involves no extra employees, only a negligible amount of extra time, and an infinitesimal volume of paper work. As Redding Sims, president, and W. S. DeVaughn, vice-president of the company explain, the entire system is based upon the job ticket and what happens to it as the job proceeds through work in the shops. "We made these tickets up for every part of each job. We've always done that. A few refinements allow the job tickets to indicate exact cost control."

When a contract is secured by National Blow Pipe and Manufacturing Co., DeVaughn, who superintends production, checks the detailed blueprints and specifications. These are broken down into a number of job tickets, one of which may represent an elbow to be made in one part of the shop, another, the fabrication of a different part out of sheet metal. With these individual tickets, DeVaughn sketches the work to be done. There are often several dozen separate tickets, each one covering a single operation, comprising a complicated job. Mechanics who are not necessarily skilled in reading blueprints can follow sketches with specifications indicated on them more easily than they could decipher a complete set of engineer's drawings. This saves time in the shop, while eliminating many errors.

The job tickets follow the work as it proceeds through the plant. On them every cost item is entered, including parts, metal, supplies, and labor. When a particular job has been completed, the tickets are then brought to the accountant's desk for determination of the exact cost of the entire job.

The accompanying picture sequence illustrates how the tickets follow the work to make possible a precise breakdown of accounting of costs and expenses.



Job tickets and blueprints are checked over by DeVaughn and foreman Charrier, to determine schedules and ticket assignment.



All labor is accounted for on every operation. Each new step indicated on job ticket is recorded in and out on the time clock.



As each mechanic gets the job ticket for his specific operation, he receives instruction to eliminate difficulties before they arise.



Materials used in various operations, as well as labor time expended, are indicated on the job tickets, to keep a complete record.



All job tickets are filed in this rack at the central shop desk where the foreman can follow the progress of each job.



Tickets are returned to the office upon completion of the job. The accountant then determines the exact costs on each job.

# Fundamentals of Sheet Metal Practice

## Part XIV

CHARLES SEEL

Alexandria, Va.

Forming transition pieces to conform to contour changes is a condition often encountered in sheet metal work. Various shapes require different procedures; forming with the use of bending brakes is rendered easier by the bumping and pre-bending methods.

When the contour of a run of ductwork of pipe changes, a section called a transition or transformer is made, incorporating this change of shape in its length. There are many varieties of transitions, round to round, on center or off; oval to round, central or off center; square to round, rectangular to round, etc., Figs. 125-126.

Forming transitions which are round to round or oval to round is simply a matter of placing the work in the slip roll former and rolling to the proper radius.

If the transition piece has a square or rectangular shape at one end and a round or flat oval on the other, a method known as bumping can be used. This is especially adaptable when the work is too long or too heavy to be shaped by hand.

For a square to round transition, a half pattern will look something like Fig. 127.

A small fitting may be shaped by rounding the top part from *a* to *b* to *c*, over a small round bar or pipe. Each *a* to *b* sector is a quarter circle, about one third of the distance from *ab* to *x* and *bc* to *x*, and then shaping *x* and *x* to 90 deg by hand. If the pattern is a full one, the operation is repeated at the other corners.

In Fig. 128 is a view of one corner *c-b-x* after forming. Some shops have a special jig made of 16 or 14 gauge shaped to form this type of transition.

If the transition is to be formed in the brake, the piece is placed in the brake as shown in Fig. 129, having line *a-x* even with the edge of the upper jaw, and making a bend or kink along this line of approximately 8 deg. The stop on the bending leaf can be set for this. A

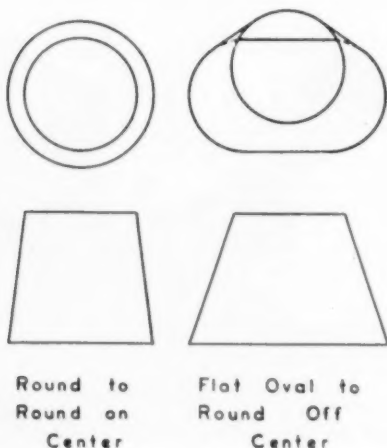


Fig. 125

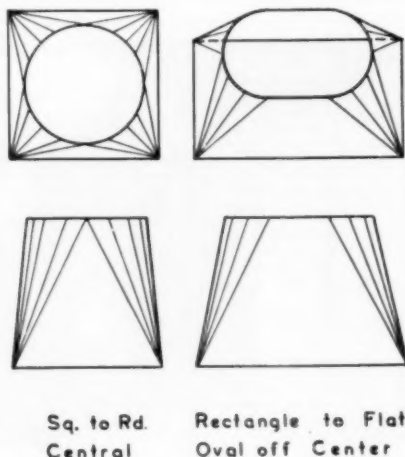


Fig. 126

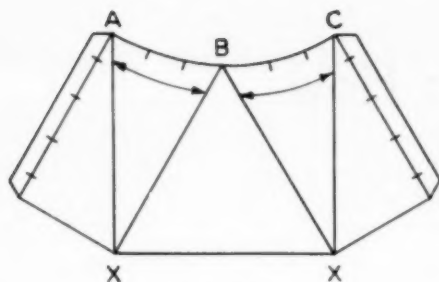


Fig. 127

series of small bends is then made from *a* to *b*, taking about  $\frac{1}{4}$  in. at a time until point *b* is reached. Make sure to keep point *x* stationary. This should bring *a-b* into a quarter round shape and point *x* at an angle of 90 deg. It is better for the angles to be slightly over 90 deg than under, because it is an easy matter to pull back the exposed part to correct the angle.

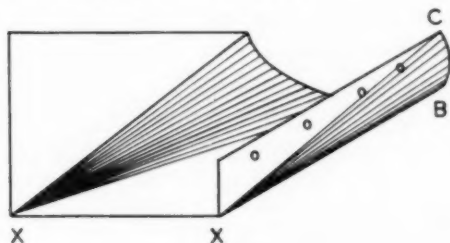


Fig. 128

After one quarter section is completed, the work is continued from *b-x* to *c-x*, if a half pattern. For a full pattern the shaping is done all the way around and the last quarter section brought into line with a suitable stake.

If the quarter circumference, *a-b*, is too large to warrant a bend of 8 deg each time, this angle must conform to the number of spaces required from *a* to *b*.

The third and perhaps best method of shaping a square to round fitting is to bump it up instead of making a series of bends. To use this method a mallet is inserted behind the lower bending leaf and just under the pivoting point. A short piece of 2 by 4 in. lumber can also be used. The purpose of this step is to tip the bending leaf enough so that each time the upper jaw is closed a slight kink will be made in the metal. The piece is inserted in the brake as shown in Fig. 129 and points *x-a* placed in line with the upper jaw and the metal bumped up by working the upper jaw up and down in a series of quick moves. The jaw is not to be completely closed each time.

Each quarter is done in a similar manner until the particular job is finished, whether a quarter, half, or full pattern.

When the long seams are to be riveted the holes are laid out and punched before forming. If a grooved

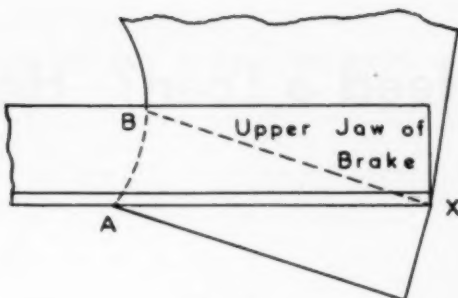


Fig. 129

seam is specified, the inside lock is made before forming and the outside one after forming.

Figure 130 shows a partially formed transformer in which the lock at *a-o* has been bent inside or up and the other lock at *a-x* will be bent outside or down after the fourth quarter has been formed. Where point *o* rides on the brake while forming the final quarter circle that part will not come out true, but will have to be brought into shape on a round stake. This difficulty will not be encountered where a half pattern is used.

For a transition like the one shown in Fig. 130, with the line *a-b-c-d-e-a* to be bent in, it is a simple matter to make these bends on the pan brake, if the piece is small enough.

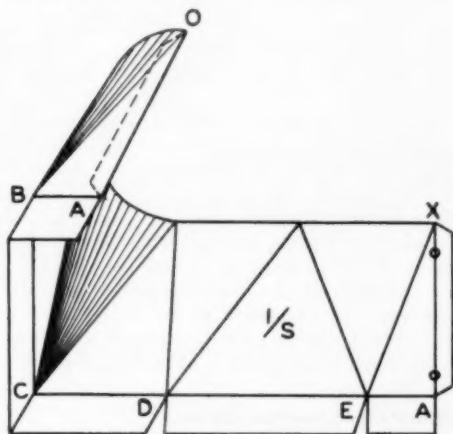


Fig. 130

If the piece is too large for the pan brake or the bends are outside bends, a method called pre-bending can be used. The piece is placed in the brake with the inside uppermost and the bend line, *a-b*, *b-c*, *c-d*, *d-e*, and *e-a*, each in turn are placed even with the outside edge of the bending leaf and malletted down to 90 deg. They are then brought back to a flat condition by squeezing in the brake or malleting, leaving a crease.

After all the laps are bent, the work is formed, riveted

(Please turn to page 132)



# Need a Loan? Here's How

ARTHUR ROBERTS

Pompton Lakes, N. J.

Capital needs should be anticipated and credit requirements ascertained in advance, to secure a loan under increasingly stringent collateral restrictions. Banks are making closer checks on current ratios between assets and liabilities, increasing the uncertainty of their issuing a loan. Credit solvency is not a question of assets alone.

NATIONAL INCOME is at a peak. Money in circulation is at an all time high. Yet it is getting harder for the average businessman to obtain a loan from a bank and interest rates are increasing. This paradox is accounted for by the fact that the pace of business due to our war-time economy is soaking up more funds usually allocated for loans than ever before. Bank loans to finance the record expansion of plant and equipment have reached such proportions that it is difficult to find money to lend.

From our field contacts, we find that quite a number of *Indoor Comfort* dealers and sheet metal contractors are being pinched for working capital and they are seeking loans. We therefore offer some current information that should give some perspective on the lending situation today. Armed with the right information, a businessman can proceed intelligently if he feels the need for a loan.

## **Anticipate loan needs in advance**

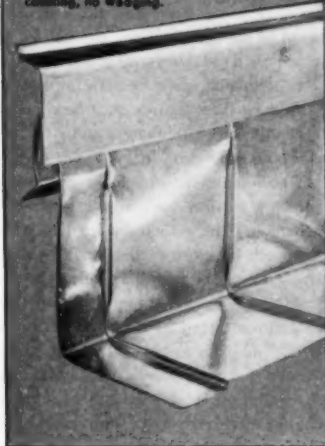
A person cannot walk up to a teller's cage, ask for a loan, and walk out with the money. This means that a dealer should anticipate his need for funds well in advance. Also, it is wise to determine the banker's attitude beforehand. Too many businessmen wait until they need the money and then have trouble getting it. Often they cannot get it and then find it difficult to stay current. The dealer who keeps a close watch on his operating figures, analyzes his business statements monthly, and budgets operations is in a better position to predetermine his need for money than a dealer who manages his business blindly.

A dealer should anticipate his need for funds when he appraises his operating figures. Many overlook this essential analysis. Some may have sufficient working capital, but they should try to foresee its adequacy just the same. It pays to be safe. High taxes and high costs today are putting a tremendous strain on reserves. Many businessmen who could adequately finance themselves some years ago are now finding it necessary to borrow funds to continue operations. It is not unusual for a businessman to find it necessary to borrow money to pay his income tax. While this is not a wholesome condition, it frequently occurs, and the reader should consider this prospect by placing on his agenda the possibility that he may need to borrow funds at some time, and contemplate the situation well in advance.

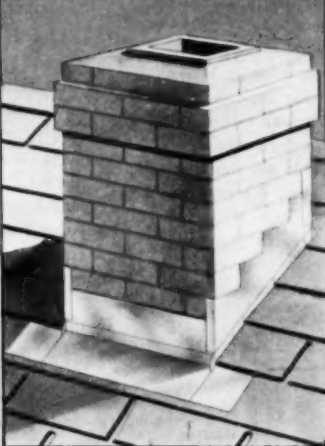
It is good policy for a businessman to file statements with his banker at least once a year and ask about his credit requirements even though he does not want a loan. Credit requirements are changing in these hectic times the same as other elements of business operation and it is best to be informed on current conditions. Moreover, when an annual statement is filed, it gives the banker confidence in a man's business sagacity. It also enables a businessman to conduct his affairs so that he will meet the bank's requirements when he needs a loan. Then too, banks differ in their credit requirements, so it is important to know what they are. If one dealer receives a loan from his bank under certain conditions, it does not necessarily follow that another will get a similar loan from his bank on the same terms. For example, some banks will lend \$3,000 if the average bank balance is \$1,000, other banks will lend more, maybe up to

**Now, it makes more sense than ever to use...**

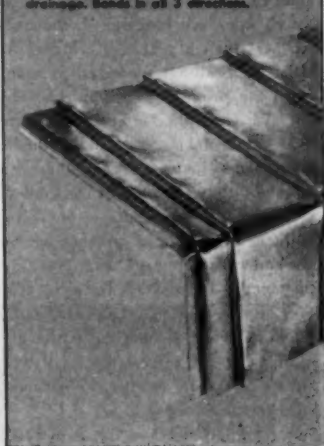
**FOR FLASHING SPANDEL BEAMS**—This new, tested technique, the Revere-Simplex Reglet System\*, offers substantial savings in cost on many jobs. Of the closed-rib type, it needs no soldering, no fillets, no caulking, no wadding.



**FOR MORE FLASHING**—Around chimneys, in roof valleys, over windows and doors and for adjacent walls, there's nothing more lasting or more satisfactory to use than Revere Copper.



**FOR THRU-WALL FLASHING**—A new method of installation, the Revere-Keysone Interlocking Thru-Wall Flashing\*, provides lasting protection against seepage and leaks. Easily installed it insures positive drainage. Bonds in all 3 directions.



# COPPER

## WHERE IT COUNTS!

● The use of Revere Copper in the vital spots in the construction of homes and commercial buildings has always made common sense. Now, with copper in short supply, it becomes even more important to use "Copper Where It Counts!"

One place where it counts most is in flashing. Revere Roll and Strip Copper for flashing is still available. Whether you are architect, builder, engineer or contractor, it will pay you to specify and use what copper you *can* get where it will do you and your clients the most good. That means in the vital spots where other materials can't stand the gaff.

Revere Copper is non-rusting, easy to work and solder, requires little if any maintenance, endures for years and years and in most cases costs no more to install, than other short-lived materials. Also, the use of copper in the

vital spots protects your reputation, results in a quality, trouble-free job.

So, to maintain your high standards, while metals remain short, use Revere Copper wherever you can. The Revere Technical Advisory Service will be glad to help in every way possible. You can avail yourself of this service through your Revere Distributor. Better get in touch with him right away.

\*Patented

**REVERE**  
COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.—  
Sales Offices in Principal Cities, Distributors Everywhere

**SEE REVERE'S "MEET THE PRESS" ON NBC TELEVISION EVERY SUNDAY**

\$5,000, if a firm's business statements and character impress them.

#### **Volume alone is insufficient collateral**

An income statement showing that a business is doing a sizable volume is not always a convincing argument that the operation is moving forward. Prices have advanced so much during the past few years that a higher dollar volume may mean fewer sales, not more. An analysis of the price trend as it is reflected in a company's sales will indicate whether it is really doing more business than a year ago. Many prospective borrowers stake their all on increased volume, and even in days when the price level was fairly stable, this was not the only yardstick the banker used to grant a loan.

The financial statement holds the key to the issuance of many bank loans. If accounts receivable are unduly large for the type of business under review, the banker determines the percentage of delinquencies. If it is high, he will tell the prospective borrower to improve his collection practices and get the money from credit customers. He may ask for a list of outstanding accounts over 60 days old; if he finds too many greybeards on the list he will throw them out entirely and not figure them in as a current asset, which will lessen a firm's chances of getting a loan because this reduces the owner's investment in the business.

A large inventory is not a deterrent to a loan if it is needed to do the volume a business is getting. In general, banks are critical if the borrower seems overloaded on inventory, particularly at this time, because they realize that many businessmen are hedging against increases, but the American Bankers Association has warned all bankers to turn "thumbs down" on borrowers who are overloading on inventory. The government is similarly critical, so that the reader should not be too confident of getting funds from a bank if his inventory is overly high. In the final analysis, however, the banker considers how a firm pays its bills. If they are paid on time, or discount, he is likely to go along with a company on a loan if it is carrying more inventory than normally.

#### **Current ratios in computing solvency**

Bankers also check the current ratio between assets and liabilities. This comparison is widely used to measure credit solvency, but many dealers have an erroneous impression that a ratio of 2 to 1, current assets to current liabilities, is satisfactory. This is wrong. The ratio varies in different fields. Furniture dealers require a ratio of about 4.5 to 1; automotive jobbers, about 3 to 1; cash grocers, 1.5 to 1; and in the heating and sheet metal field, the operator should maintain a ratio of 2.5 to 1, or better. If the current ratio approximates the norm in the specified field and other balance sheet ratios are in good proportion, a banker may look favorably on a loan.

If the fixed assets equal the net worth the banker may refuse a loan even if a businessman is earning a satisfactory profit on a satisfactory income or volume. This ratio means that he is supplying no working capital to

the business, that the reason the firm is short on working capital is that his entire business investment is represented by the fixed assets owned, which may be worth only ten cents on the dollar at a forced sale, should the owner be compelled to liquidate. The banker thinks of such contingencies when granting a loan. Usually such a condition has existed for some time and the banker, expecting his money back in a year, may feel that the prospective borrower can't change the ratio for the better quickly enough to return his money, and the borrower may ask for a renewal of the loan. When the net worth of a business is frozen in fixed assets, it is hard to unfreeze the ratio. A company must be careful not to slide into this pit. Balance sheet figures must be checked periodically such dangerous alliances and correct the defects before they become chronic.

If the total debt, both current and fixed liabilities, exceeds the net worth, a businessman won't get much consolation from a banker if he asks for a loan because his creditors own as much or more of the business than he does. If they crack down, the loan may be in jeopardy.

In this field, the ratio of fixed assets to total assets should run around 30; in other words, 30 per cent of total assets are invested in fixed assets. If a balance sheet shows a ratio exceeding this figure, the company may not have working capital adequacy and may have trouble getting a loan. Too much money invested in fixed assets doesn't look good to a banker. The owner should be sure he has written off enough depreciation. If he has not, the banker may cut the firm's assets down to current value and the ratio of fixed to total assets may then be too low to justify a loan.

For working capital purposes, it is better to borrow short-term loans, payable in one year or less. It is poor policy to renew a short-term loan continuously because a banker may assume that a business is considering it a long-term loan and may ask for payment at the renewal date, which may cause financial inconvenience. Short-term loans are based on character or collateral. A bank may charge a lower interest rate if the borrower furnishes collateral. At least, it is wise to ask about it. Long-term loans average five years and may be used to purchase fixed assets, for business expansion or other betterment.

#### **Borrowing to cover operating needs**

Bank loans secured by a lien on new or used operating equipment bought by a firm may run three years or longer. Compare the rates given by equipment manufacturers and distributors for financing a purchase with the cost of a bank loan. It may pay to borrow from the bank instead of buying on time.

The "straight" loan or a lien of credit upon a secured note is the traditional form of bank credit. Usually it is related closely to the size of the "cushion of risk capital" invested in the business by the borrower. In other words, if the bank is to risk its funds on a loan basis, the borrower must have an adequate proportion as an assurance that he can and will support the credit.

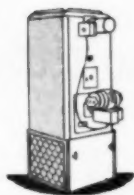
*(Please turn to page 130)*



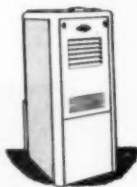
**You'll have more customers  
and greater profits with**

**GENERAL MOTORS  
DELCO-HEAT**

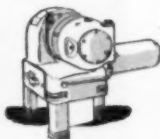
**OPC Conditionairs**—a value-priced line of forced air furnaces with pressure atomizing oil burners. Blower-filter unit may be bottom or back mounted. "Reverse-flow" model for "perimeter" and "radial" heating. Deluxe model with matching blower and furnace units also available.



**Delco-Heat Gas Conditionair** has the exclusive Multi-Rad heat exchanger. The Multi-Rad system of combustion chambers gives maximum radiation area so it can extract the greatest amount of heat from the fuel. Five models, all with 12-gauge heat exchangers, are AGA-approved for all gases, including LP and LP-Air. Also for high altitude installations.



**Rotopower Oil Burner** is dependable and fuel-thrifty. The Rotopower Unit combines the Rigidframe motor, fan, pump, oil conditioner and Thin-Mix fuel control—all in a single cartridge-type assembly. This assembly can be removed and replaced in a matter of minutes, making inspection and adjustment an easy matter.



Delco-Heat retail distributors are always able to bid on profitable new building installations or those money-making modernization jobs. That's because Delco Appliance manufactures a *complete line* of heating equipment to fit any home-heating requirement.

Two reasons that Delco distributors are finding it so profitable to sell the Delco-Heat line are Delco's low prices and increasing consumer acceptance of the Delco-Heat name. And every Delco-Heat unit—built and backed by General Motors—is designed to give years of economical, trouble-free service.

There is a gas or oil-fired Delco-Heat unit for any type heating system, any modernization requirement. Send coupon below for information about a Delco-Heat franchise.

**CLIP AND MAIL TODAY!**

DELCO APPLIANCE DIVISION,  
General Motors Corp., Dept. AA, Rochester, 1 N. Y.  
Please send me information about a Delco-Heat franchise.

Name \_\_\_\_\_  
Firm Name \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

**For a good deal—DEAL WITH DELCO**

# Solving the Lost Tool Problem

LAWRENCE E. GICHNER

Washington, D. C.

Most contracting firms are faced with the problem of tool disappearance, especially on construction jobs, where there is more opportunity for tools to turn up missing. This Baltimore firm has minimized its tool losses by narrowing the responsibility for its outgoing tools, while maintaining a simple written record of every tool which is delivered to a job.

**T**HE FINGLES CO., Baltimore, Md., has found the solution to one of the sheet metal industry's biggest problems, that of lost tools and equipment.

Almost every sheet metal contractor's lament is the money spent annually for lost tools, particularly on construction jobs. "There is a huge difference", they cry, "between what goes out and what comes back to the shop when the work is over". One purchasing agent has said "Why, we bought enough electric drills for every mechanic to have at least two, and all we can find now is a mere handful."

The Fingles Co. has come up with two effective and simple answers. To many of us who are confronted with a problem of this kind, the simplicity of the solution becomes lost in the mass of detail in our business. It takes an objective eye to discover the simple cure.

Instead of making every workman on a job responsible for returning his equipment, Fingles appoints one man in charge of tools, believing that everybody's job is nobody's job. A written record is made of all tools and these tools are signed for on the job by the man responsible to receive them. A printed Delivery and Collection Slip listing the nineteen most commonly used items with space at the bottom to note additional pieces, is a form that has saved this progressive organization thousands of dollars in equipment. There is a space for the date when the items are received and a second date at the bottom to be filled in when the tools are returned with the signature of the driver who collected them. A carbon copy of the form is made in the office with the job number, and another is kept by the mechanic.

To distinguish it the Delivery and Collection Slip is printed on light blue paper, measuring 7 x 11 in., and lists the following:

Acetylene Burning Outfits  
Block and Fall  
Cleat Pans  
Electric Drills  
Electric Extension Cords  
Electric Hammers  
Extension Ladders  
Fire Pots  
Hand Groovers  
Mallets

Pin Tongs  
Section Ladders  
Soldering Irons  
Star Drills  
Swinging Scaffold  
Tool Boxes  
Valley Tongs  
Welding Machines  
Whitney Punches

(Please turn to page 134)



This new 10 ft plate shear is one of the production expeditors in the Fingles plant. A variety of machinery helps to speed production time.



# WITH *Luxaire* YOU SIMPLIFY YOUR ENTIRE BUSINESS OPERATION...

**BUYING! SELLING! WAREHOUSING!**

with a *Complete Line* of Heating Units *Designed and Approved*

## LUXAIRE BASEMENT AIR CONDITIONING UNITS

With Steel Heating Element



As a Gas Unit  
70,000 to 250,000  
B.T.U. Input



As an Oil Unit  
76,000 to 212,000  
B.T.U. at Bonnet

With Cast Iron Element



GAS Fired Unit  
90,000 to 200,000  
B.T.U. Input

Approved for Either GAS or OIL

For GAS Only

to burn  
***Either GAS or OIL***

You are losing sales if you are not taking advantage of the many features offered by Luxaire:

Offer your customers a choice of fuels in a complete range of sizes.

Offer your customers a unit which can be converted from oil to gas without loss in efficiency.

Offer your customers rugged dependability and fine appearance at competitive prices.

You are losing profits if you are not taking advantage of the low 1952 prices now in effect on Luxaire heating units.

Sell one line for all your installations! See your nearby Luxaire jobber for catalog and complete information.

## LUXAIRE COAL-FIRED FURNACES



Air Conditioning  
Unit Steel Element  
86,642 to 127,633  
B.T.U. at Register



Steel  
Gravity Furnace  
20" to 34" Drum



Cast Iron  
Gravity Furnace  
20" to 28" Firepot

## LUXAIRE COUNTERFLOW UNIT



As an Oil Unit  
73,100 to 84,000  
B.T.U. at Discharge  
Outlet



As a Gas Unit  
63,000 to 115,000  
B.T.U. Input



As an Oil Unit  
73,100 to 106,000  
B.T.U. at Bonnet



As a Gas Unit  
63,000 to 123,000  
B.T.U. Input



As an Oil Unit  
71,200 to 100,000  
B.T.U. at Bonnet



As a Gas Unit  
83,000 to 130,000  
B.T.U. Input

## LUXAIRE UTILITY A. C. UNIT

## LUXAIRE GRAVITY FURNACES

Approved for Either GAS or OIL with Equal Efficiency

THE C. A. OLSEN MANUFACTURING COMPANY • ELYRIA, OHIO

*Luxaire* HEATING & AIR CONDITIONING UNITS

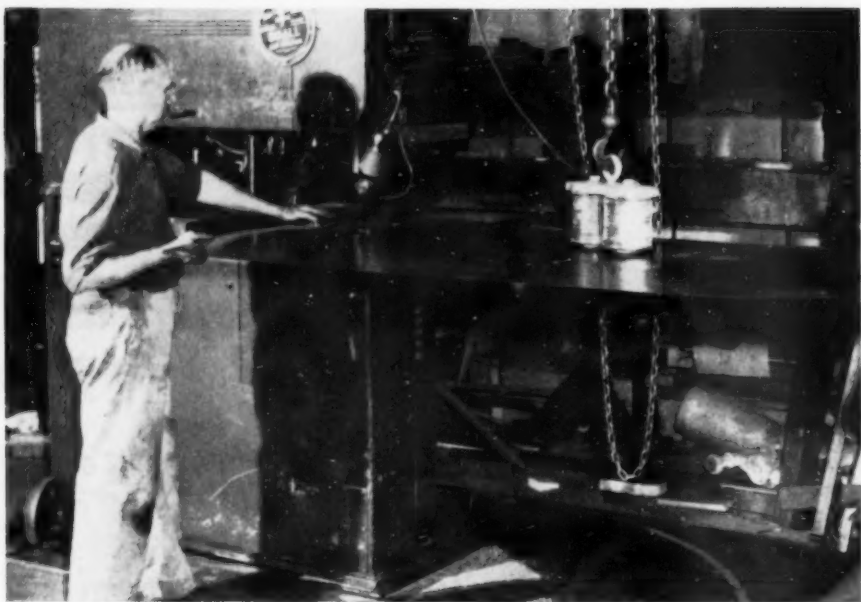


Fig. 1. Band machine operator can work alone despite the cumbersome nature of the metal sheets. Note electromagnet suspended from chain hoist holding sheets at the machine table level.

## Band Machine Facilitates Shaping Large Metal Sheets

**A**LTHOUGH SHEET METAL contracting shops using band saws to expedite their production experience no trouble in handling sheets of average width and length, today's blueprints are likely to call for almost any size and this involves problems of maneuverability, particularly space limitations to swing the work when cutting contours. However, the band sawing of large sheets is now readily simplified as illustrated. Furthermore, the set-up is by no means limited to single sheets; as many as six 1/16 in. or twelve 1/32 in. sheets may thus be simultaneously cut in a stack by sweat soldering at various locations.

As shown in Fig. 1, the operator can still handle the job alone, whereas under normal conditions he would require a helper to maneuver the

extreme end of the sheet or stack and some means of support at the center would also have to be provided. As readily seen, the work is held at machine table level by an electromagnet suspended from a chain hoist. The band machine is

mounted on rollers and rotates in a 180 deg arc on the steel plate. The drive mechanism, Fig. 2, consists of a 1/4 hp motor, a speed reduction gear, and chain drive which slowly turns the machine on the drive wheel.

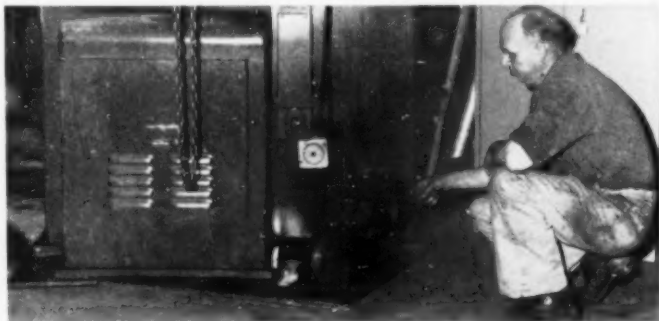


Fig. 2. Drive mechanism of the band saw machine includes a 1/4 hp motor, speed reducer and chain drive to turn the machine at required slow speed on the drive wheel.



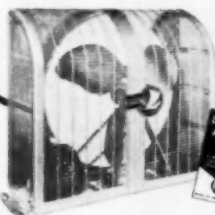
**Says Jack Green,  
Energetic Viking Representative**

"My jobbers and dealers know that the Viking single model, Mass-Market fan enables them to keep a lower inventory while selling rings around their competitors."

"My Bridgeport, Conn. Jobbers and Dealers Know

# Viking Window Fans

Mean...**MORE MONEY IN THEIR  
POCKETS with LESS  
INVESTED!"**



"I've Found that the **Viking MASS-MARKET FAN**

**IS A DOUBLE-BARRELED MONEY MAKER!**

The Viking Sales Plan helps my dealers smash sales records—that assures me of a fast turn-over on my investment dollar. In addition, the space I save by having to stock a single model fan can be turned into added profit."

**FRANK J. GARRITY, Parsons Bros., Inc.,  
31 E. Washington Ave., Bridgeport, Conn.**



**READ HOW Viking WINDOW FANS MADE MONEY FOR THESE CONNECTICUT DEALERS**



"I've had some great summer seasons since I've taken on the Viking Fan. There are lots of people with kids living in small apartments and homes around my section. The draft-free, cool night air provided by those big 22" blades is just the ticket for those people. The price is just right for them too."

**C. R. WHITE, C. R. White & Sons,  
101 Harbor St., Bridgeport, Conn.**

"I've found that in 9 out of 10 cases, when I demonstrated a Viking Fan in the home, that I've made myself a sale. I just use the easy demonstrator clamp to mount the Viking, and let 'er spin. In a few minutes, you've reduced the temperature 20 to 25 degrees and practically cinched a sale."

**HOWARD E. PALMER, H. E. Palmer Co., Inc.,  
729 Main St., Stamford, Conn.**



"Viking Fans have made a flock of new customers for me. Give a man a cool night's sleep during the dog-days of summer and you've got a customer. Just tell him his house can be flooded with 3100 cubic ft. of fresh, cool night air a minute, and for only a few cents a night, and he's sold."

**RALPH M. SCHEDE, L. C. Schede and Sons,  
Brook St., Darien, Conn.**



## DO A QUICK-EASY SELLING JOB... write for the unique-strong VIKING SELLING PLAN

- Unique Viking Vadnit.\* Redeemable for \$3 towards liberal local co-op advertising. You get one Vadnit for each fan you buy.
- Fan Promotion Kit contains all the sales tools needed to pile up record profits from fan sales.
- Viking Window Fan Display. A demonstrator that really sells fans. Hundreds were sold for \$8.00 but you can get one FREE for only 3 Vadnits.

\*Viking Advertising unit for credit toward 50-50 cooperative advertising.

**Viking**  
AIR CONDITIONING CORP.  
5601 Walworth, Cleveland 2, O.



FANS



BLOWER  
ASSEMBLIES



HUMIDIFIERS



BLOWER WHEELS



PACKAGE  
BLOWERS

do a better job - easier  
WITH

## METALBESTOS

Metalbestos is best for venting gas appliances because of these important features:

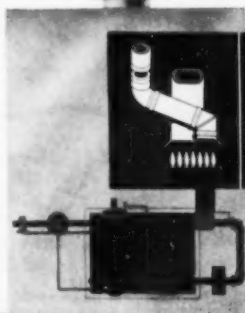
- All aluminum construction for high corrosion resistance...will not break, crack or shatter.
- Double wall design...an inner "hot stack" for strong draft, minimum condensation...an air-insulated outer pipe to keep surrounding walls cooler.
- Special precision-made couplers automatically align pipe sections...provide tightly sealed joints for complete protection against leakage.

In addition, Metalbestos can be installed faster and easier than any other gas vent approved by Underwriters' Laboratories. The patented couplers, adjustable lengths and other versatile fittings make assembly easier and faster, and eliminate crimping, cutting or tedious fitting.



Send for  
**FREE VENTING MANUAL**

This useful manual, "Venting of Gas Appliances," contains important rules and helpful tips on approved venting practices. No cost or obligation. Write today to Dept. B



## METALBESTOS DIVISION

WILLIAM WALLACE COMPANY • BELMONT, CALIF.

# NIAGARA

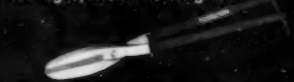
## BUYER'S GUIDE FOR SHEET METAL WORKERS



Niagara Extra Heavy Snips cut 16 gauge mild steel.



Niagara Double Cutting Shear for cutting cylinders to length.



Niagara Bench Shear for heavy duty hand shearing.



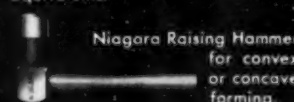
Niagara Bench Plate for rigidly mounting stakes, bench shears, etc.



Niagara Straight Edge for accurate layout work.



Niagara Circumference Rule graduated in inches and circumferential equivalents.



Niagara Raising Hammer for convex or concave forming.



Niagara Stakes made in a complete line of essential shapes and sizes.

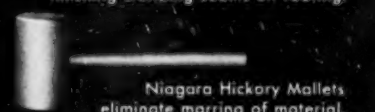
• The hand tools shown on this page are just a few of the hundreds of machines and tools which are helping sheet metal workers do better work with less effort and lower cost. Men who take pride in their work find there is economy in Niagara proven high quality. Niagara has been a quality name since 1879. Ask your dealer or write for information in regard to America's most complete line of machines and tools for plate and sheet metal work.



Niagara Gutter Beaders designed for convenient operation.



Niagara Hand Seammers for finishing standing seams on roofing.



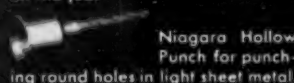
Niagara Hickory Mallets eliminate marring of material.



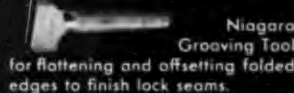
Niagara Pipe Crimper for thicknesses up to 22 gauge.



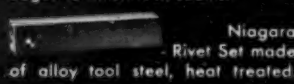
Niagara Handy Tongs for bending light sheet metal in the shop or on the job.



Niagara Hollow Punch for punching round holes in light sheet metal.



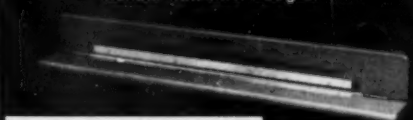
Niagara Grooving Tool for flattening and offsetting folded edges to finish lock seams.



Niagara Rivet Set made of alloy tool steel, heat treated.



Niagara Riveting and Setting Hammers have forged steel heads, heat treated, polished and fastened to handle with steel wedges.



Niagara Wood Roofing Folder for light weight, low cost folding.



**Unsurpassed for Reliable, Trouble-Free Service  
on Thousands of Installations...**



## **DETROIT'S V-579 "BI-FLEX"** **Gas Valve**

### **Check this Exclusive Combination of Features**

- ★ Quiet operation—no click, no hum
- ★ Rugged, compact design—easy to service
- ★ Inexpensive
- ★ Universally adaptable
- ★ "Bi-flex" motor operated—low voltage
- ★ Compensated for changes in ambient temperature
- ★ Snap action opening and positive closing
- ★ 1/2 inch to 1 1/4 inch sizes

Reports pouring in from servicemen all over the country regarding thousands of actual V-579 installations confirm the fact that from the standpoint of smooth, reliable, trouble-free performance this amazing valve has no equal. That's because the V-579, a snap acting valve actuated by a strong "Bi-flex" motor, eliminates the difficulties so often found in ordinary diaphragm and magnetic type valves. In addition, the snap acting, positive closing V-579 is built for quiet operation and is designed to function independently of gas pressure. But why not find out for yourself—see your **DETROIT** wholesaler today and ask him about **DETROIT'S** V-579 "Bi-flex" Gas Valve available in sizes to fit any domestic gas heating system.

# **DETROIT**

**LUBRICATOR COMPANY**

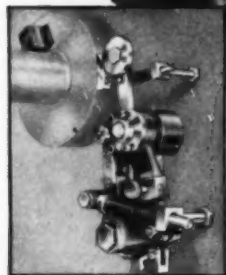
5900 TRUMBULL AVE., DETROIT 8, MICHIGAN  
REPRESENTATIVES IN PRINCIPAL CITIES  
DIVISION OF AMERICAN RUBBER & Standard Sanitary CORPORATION  
RAILWAY & ENGINEERING SPECIALTIES LTD.  
Canadian Representatives in Montreal, Toronto, Winnipeg



DETROIT HEATING AND REFRIGERATION CONTROLS • ENGINE  
SAFETY CONTROLS • FLOAT VALVES AND OIL BURNER EQUIP-  
MENT • DETROIT EXPANSION VALVES AND REFRIGERATION  
ACCESSORIES • STATIONARY AND LOCOMOTIVE LUBRICATORS

*Serving home and industry*

AMERICAN STANDARD • AMERICAN BLOWER • ACME CABINETS • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON



#### CLUTCH DETAIL

Note roller and cam which force disengagement through clutch pawl. Clutch finger returns to starting position through spring and toggle leverage.

*It's  
a*

**WYSONG!**

No. 55 — available in flywheel and geared types

Mention Punch Presses and the first question is, "How about the Clutch?"

That is why Wysong insisted on more than mechanical efficiency in the square pin type clutch. They insisted on something to reduce costly repairs and expensive down time . . . something to eliminate excessive wear and too frequent scoring of crank shafts and clutch dogs.

This was accomplished with easily replaceable, hardened and ground steel wear plates (*Patent applied for*). The steel clutch dog is also hardened and ground for perfect fit, reducing wear to a minimum. When prolonged use does produce wear, wear plates can be replaced at moderate cost with negligible loss of time.

An improved safety feature is also provided by spring loading the clutch finger to insure complete disengagement (*Patent applied for*). When set for single stroke operation a second stroke cannot be made until the foot pedal is completely released and again depressed.

Compare these and other features of Wysong Presses with any others you have considered best in punch press design and construction. *Feature for feature and dollar for dollar you get more when you 'Buy Wysong'.*

Wysong builds Squaring Shears, OBI Presses, Slip Roll Formers, and Rotary Combination Machines. See your dealer or write to the factory for full information, Wysong and Miles Company, Greensboro, N. C.

**WYSONG**



H. J. Brobst, right, talks over Electronic Moduflow with Honeywell representative F. E. Snouberg

## "I've sold 500 Honeywell Electronic Moduflow jobs in the last 5 years"

Here's a unique success story from Cleveland Dealer "Red" Brobst—listen to it!

"After some 500 successful installations, I say it's *easy* to sell Electronic Moduflow.

"The big appeal, the way I see it, is the fact that it's *completely different* from ordinary, conventional systems; practically a whole, new concept in heating control.

"Customers are generally surprised when I ask them if they want mechanical or *electronic* controls for their heating plant. They ask me to explain. I do—with my sales talk on Moduflow! They are fascinated when I tell them they can

actually have a control stationed *outside* their house—the Electronic Weathercaster—that will sense and send temperature changes to the heating plant *indoors*.

"Covering the basic sales points and customer benefits of an *electronic* control system—as compared to a mere mechanical system—is usually enough. Prospects buy."

★ ★ ★

Take a look at the next page. See how Dealer "Red" Brobst wraps up a typical Moduflow sale!



*Another Plus-Profit  
Product from Honeywell*



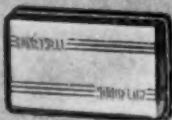
**Electronic Weathercaster**



**Electronic Chronotherm**



**Electronic Relay Amplifier**



**Averaging Thermostat**

**"Prospects' eyes pop when I  
show them how the  
Electronic Weathercaster works!"**

"When I first started selling Moduflow I found many home owners had never even heard of electronically controlled heating.

"But they sat up and took notice when I started to demonstrate the Electronic Weathercaster!

"And they were usually pretty well sold by the time I finished telling them about this amazing control. How, with its super-sensitive electronic wire coil, it picks up outside temperature changes and relays them inside, to the Electronic Relay Amplifier; and how the Amplifier—the 'brain' of the system—interprets these signals and sends them on to the heating plant!

"I conclude with facts about the rest of the system, like the Electronic Chronotherm with its automatic morning pick up; and how Moduflow can be adapted to almost any type heating.

"It makes a pretty wonderful sales story, and it's easy to see why it sells."

*For additional facts on Electronic Moduflow, call your local Honeywell office. Or write Honeywell, Dept. AA-5-130, Minneapolis 8, Minn.*



**Mr. Howard Heyl, Lakewood, says:**

"Our feet have been warm in this house for the first time, thanks to Moduflow. The children rarely have colds any more and we've noticed our fuel bills have been way down. It's the perfect home heating system."

**"Red" Brobst's customers  
tell why they like  
Electronic Moduflow  
in their homes!**



**Mr. Harry A. Beck, Cleveland, says:**

"It's ideal. Since installing Moduflow we don't even have to change the thermostat setting, year-round. Due to the increased circulation of air, my wife tells me the house stays much cleaner, too."

**MINNEAPOLIS  
Honeywell**

*First in Controls*



... for gutters



and downspouts



## U-S-S 17 Stainless Steel is the lowest-cost quality material you can use today (No CMP tickets needed)

For strength, permanence and minimum maintenance, no other material can match the performance of Stainless Steel sheet and strip in gutters, downspouts and similar applications. And, most important of all to you today, a suitable grade of Stainless is readily available at a cost competitive with any other quality gutter and downspout material.

That grade is U-S-S 17 (Type 430) Stainless. Containing no nickel, it is unaffected by the shortages that limit the use of certain Stainless grades. Since January 28,

1952, no CMP tickets have been needed for this grade. You can use it now on all types of jobs.

U-S-S 17 Stainless Steel gives the kind of performance that will please your most particular customers. It resists corrosion; it requires no painting or other surface protection; cleaning with soap and water will keep its surface bright. The minimum maintenance and replacement required make the ultimate cost extremely low. The strength and corrosion resistance of Stainless Steel permit the use of thinner gages with no sacrifice in service life.

From the standpoint of fabrication, you'll find Stainless Steel imposes no difficulty. Any sheet metal shop that maintains good standards of workmanship can handle it in stride. The usual shop equipment is adequate. Installation procedures are similar to that of other materials.

Your steel supplier can furnish you with U-S-S 17 Stainless Steel sheet and strip in sizes and gages you require. Get full details on this material and be prepared to handle current and future jobs that call for quality material.

## U-S-S STAINLESS STEEL

AMERICAN STEEL & WIRE . . . COLUMBIA-GENEVA STEEL . . . NATIONAL TUBE . . . TENNESSEE COAL & IRON  
UNITED STATES STEEL SUPPLY, WAREHOUSE DISTRIBUTORS . . . Divisions of UNITED STATES STEEL COMPANY, PITTSBURGH  
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

2-408



UNITED STATES STEEL



It's *New!* It's *Different!*  
It's *Better!*



**Low-Cost Oil Heat for Homes  
and Commercial Applications**

# Mueller Climatrol

## Type 253 Horizontal Oil-Fired Furnace



### Compare these Features

**Welded Steel Heat Exchanger** — Upright flue travel. Unique design, with long flue travel, assures top efficiency. High, insulated crown sheet — will not burn out.

**Mansome Casing** — Trim, compact, easily accessible. Unit can be serviced in installed position. Entire unit cleanable without removing casing.

**Large, Quiet Blower** — To provide required CFM with lower blower speeds — thus reducing vibration sounds, and insuring longer life. Design of heat exchanger provides free flow of air over all heat exchanger surfaces.

**Shipped Assembled**—Pre-wired with fan and limit switch in position. Burner, blower motor and all controls are factory tested before shipment.

Here is an outstanding new horizontal oil furnace with unique design features which assure more efficient and quieter operation—with longer life. The Type 253 can be used as a horizontal furnace in attics or crawl spaces of homes, or it can be suspended for application as a blower-unit heater in commercial installations.

Initially, this unit is available in one size—110,000 Btu input. Soon to come are sizes up to 225,000 Btu input. It is available with either of two efficient Mueller pressure atomizing oil burners, and can easily and inexpensively be converted to gas.

It will pay you to get full information on the many outstanding design, construction and operation features of this new Mueller Climatrol horizontal oil furnace. Write today; use the convenient coupon below.

**Mail this coupon!**

**Mueller  
Climatrol**



L. J. Mueller Furnace Co.  
2030-V W. Oklahoma Ave., Milwaukee 15, Wis.

Send me more information on your new Type 253 Horizontal Oil-Fired Furnace.

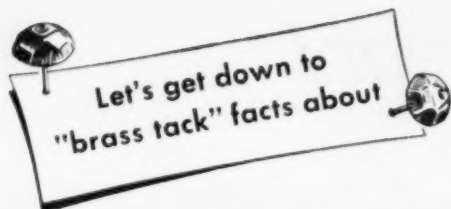
Name.....

Company.....

Address.....

City..... (.....) State.....

8-128



# CHEVROLET

## Advance-Design TRUCKS



### Fact No. 1

#### YOU PAY LESS TO BUY!

Get the price on the Chevrolet truck that's the right size, type and capacity for your work. You'll find that it lists for less than any other truck capable of doing the same job. Chevrolet has the lowest priced line in its field.

### Fact No. 2

#### YOU SAVE ON COST PER MILE

You can't beat Chevrolet's Valve-in-Head engine for over-all economy—fuel, oil, upkeep. It just keeps rolling along. And extra-rugged frame, hypoid rear axle, and Flexi-Mounted cab mean longer life, lower maintenance.

### Fact No. 3

#### YOU GET THE RIGHT TRUCK FOR THE JOB

No truck is worth the price if it doesn't get the job done—fast and sure. Chevrolet trucks are factory-matched to the payload, factory-matched to the job. There's a standard body and chassis, or chassis for special body, that's just right for your work.

### Fact No. 4

#### YOUR TRUCK INVESTMENT IS SAFER!

Comes time to trade in an old Chevrolet truck for a new one, here's good news: Year after year, used Chevrolet trucks traditionally bring more money compared to what they cost, than other makes. The demand is there, because Chevrolet trucks stand up better.

### CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

**TWO GREAT VALVE-IN-HEAD ENGINES—**Leadmaster or the Thriftmaster—to give you greater power per gallon, lower cost per load • **POWER-JET CARBURETOR—**for smooth, quick acceleration response • **DIAPHRAGM SPRING CLUTCH—**for easy-action engagement • **SYNCHROMESH TRANSMISSION—**for fast, smooth

shifting • **HYPOID REAR AXLE—**for dependability and long life • **TORQUE-ACTION BRAKES—**on light-duty models • **PROVED DEPENDABLE DOUBLE-ARTICULATED BRAKES—**on medium-duty models • **TWIN-ACTION REAR BRAKES—**on heavy-duty models • **DUAL-SHOE PARKING BRAKE—**for greater holding ability on heavy-

duty models • **CAB SEAT—**with double-deck springs for complete riding comfort • **VENTILATION—**for improved cab ventilation • **WIDE-BASE WHEELS—**for increased tire mileage • **BALL-TYPE STEERING—**for easier handling • **UNIT-DESIGNED BODIES—**for greater load protection • **ADVANCE-DESIGN STYLING—**for increased comfort and modern appearance.

CHEVROLET DIVISION OF GENERAL MOTORS, DETROIT 2, MICHIGAN



# You can rely on RHEEM for solid advertising support!



## THE BEST PUBLICATIONS

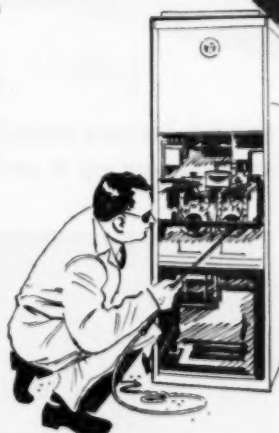
Rheem ads in these magazines reach a total of 13,934,585 readers. Among these millions are the best prospects right in your locality. Rheem national advertising is, in fact, local advertising with which you can tie-in—directing profitable sales right to your store.

## THE BEST SALES STORY

Rheem advertising is presented in a dramatic, attractive way through the Fire-Tested theme. Its story is believable and convincing...

"When fully assembled, gas and power are connected to every Rheem Furnace. The pilot is lighted. The burners are fired. With a 48-point test, trained inspectors make certain that each furnace is ready to deliver the finest in trouble-free, warm-air comfort."

Feature Rheem Furnaces in your store... promote Rheem over your own name... and see how you profit!



Gas Furnace

**FIRE  
TESTED**



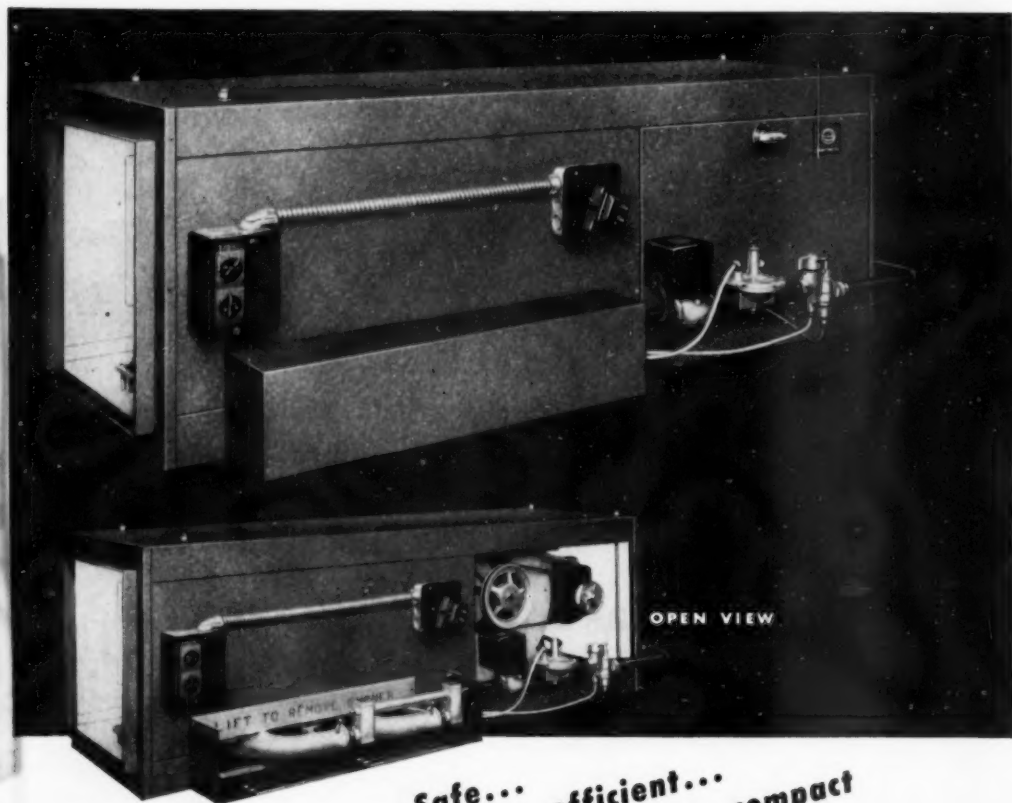
**RHEEM MANUFACTURING COMPANY** General Sales Offices, 570 Lexington Ave., New York 22, N.Y.  
Manufacturing Plants in 22 Cities Around the World

© 1952 RHEEM MFG. CO.

**It's new!**

**It's needed!**

**an efficient**

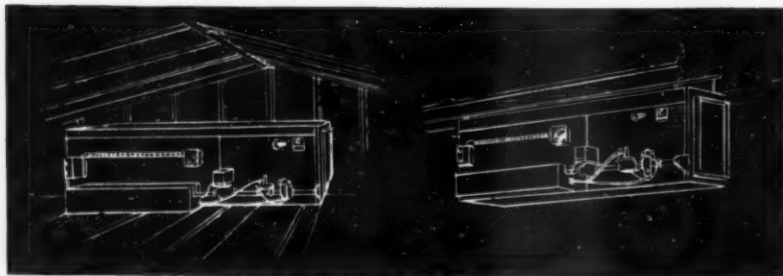


**Safe... efficient... compact**

**for perimeter installations, conventional duct systems or as a unit heater**



**THE HEART** of the Pawnee is its heavy steel heating element and efficient slotted port type burner shown above. Especially designed to provide correct amount of heating surface without hot or cold spots. Burner has rugged cast iron body for long life. Dependable and quiet in operation.



**gas fired** **horizontal** **unit for**

**limited space, out-of-the-way installations**

# **PAWNEE**

## **Winter Air Conditioner**

### **by AMERICAN-Standard**

**D**ESIGNED especially for low cost installations in homes where limited floor space makes it difficult or undesirable to set up conventional winter air conditioners, this new gas fired horizontal unit has tremendous sales appeal.

The Pawnee's compact size and safe construction permits installation in attics, under floors, or suspended from the ceiling of basements, closets, utility rooms, or similar out-of-the-way locations. It is also perfect for zone heating in larger single floor homes where more

than one winter air conditioner can be employed.

Completely factory assembled and wired, the Pawnee is easy to handle and can be installed quickly and economically in both new construction and modernization jobs. It operates efficiently with natural, manufactured, mixed, and liquefied petroleum gas. Made in four sizes: 40,000, 60,000, 80,000 and 100,000 Btu input per hour. For details, contact your wholesale distributor. **American Radiator & Standard Sanitary Corporation**, P. O. Box 1226, Pittsburgh 30, Pennsylvania.

**Ready NOW . . . immediate delivery!**

- Pawnee is available for immediate delivery. Arrange to stock and display this new gas fired horizontal winter air conditioner in your community during the busy building and modernization season just ahead.

# **AMERICAN-Standard**

## **HEATING**



*Serving home and industry*

AMERICAN STANDARD • AMERICAN BLOWER • ACME CABINETS • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONGUE & LARK



WHY DO IT THE HARD WAY? . . . . by *BUSTER*



## FREE BOOK

Has all the answers. It tells what tools to use and how to use them. Fully illustrated. A postcard will bring it to you. Send today.

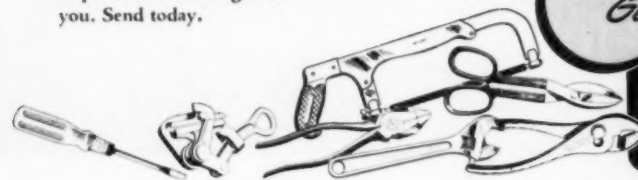
## There's a CRESCENT TOOL in the PROPER SIZE for every job

CRESCENT not only makes a wide variety of daily-used Hand Tools . . . but makes them in a complete range of sizes. Good tools, like CRESCENT and CRESTOLOY, are designed to handle work loads within their generously-rated capacities. If Buster would read "How to Use Hand Tools," he would get a lot more mileage out of that fine Crescent Cabinet Screwdriver . . . and require less attention from the First Aid Department. CRESCENT and CRESTOLOY TOOLS are sold by Hardware Dealers and Industrial Distributors everywhere.

**CRESCENT TOOLS**

*Give Wings to Work*

*Sign of the Artisan  
Symbol of Excellence*



Crescent is our trade-mark, registered in the United States and abroad, for wrenches and other tools. Sold by leading distributors and retailers everywhere and made only by  
**CRESCENT TOOL COMPANY, JAMESTOWN, NEW YORK**

# st Kaustline

... FIRST IN QUALITY



## ◀ LOW BOY

OIL FIRED LOW BOY. Designed for cellar installation. 3 models deliver from 85,000 to 110,000 B.T.U.'s. Larger units up to 250,000 are shipped knocked down.

## HIGH BOY ▶

The OIL FIRED HIGH BOY "Jersey 75" Automatic Forced Warm Air Furnace. Requires only 3½ square feet of floor space: 75,000 B.T.U.'s. Chrome steel firepot liner. Fully automatic controls. Shipped ready to install. Weight 324 lbs.



★ Kaustline was among the first to get away from a drum style combustion chamber by building Kaustline's famous Airway Combustion Chamber.

★ Kaustline pioneered the standardization of a chrome-steel firepot liner.

★ Kaustline was among the first to wire controls to the front panel.

★ Kaustline was first to feature air-flow meters on deluxe models of 110,000 B.T.U.'s and over. These meters eliminate the "Cold 70°" by giving more even heat.

★ Kaustline's first consideration is quality ... All units are of heavy steel construction, expertly welded by our skilled workmen ... Units with outputs below 110,000 B.T.U.'s are factory assembled.



## Kaustline

## FOR QUALITY

Modulated Warm Air Furnaces from 65,000 to 270,000 B.T.U.  
Septic Tanks ... Pressure Vessels ... Oil and Gasoline Storage  
Tanks ... Truck Tanks ... Custom Built Fabricated Equipment

# Imagine doing business with 1890 methods!



The bookkeeper with his eye shade and sleeve garters, at a high top desk, typified the tempo of business in the Gay 90's. His was a tedious and exacting job. Motorized equipment such as adding machines, calculators, bookkeeping machines, tabulating machines, postage meters, and letter openers, to name a few, were still in the future.

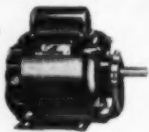
During this period Emerson-Electric was founded. Since then motors have been supplied to scores of leading manufacturers of labor-saving devices.

They staked the reputation of their products on Emerson-Electric motors, and with the passing years became nationally known for dependable service.

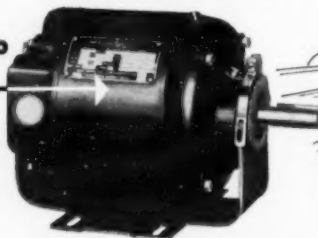
Consider this 62-year-old reputation for dependability and efficiency, earned by Emerson-Electric motors for use in business, on the farm, in the home and in industry. Your inquiry is invited on the complete line of standard motors in horsepower ratings from 1/20 to 5, and hermetic motor parts 1/8 to 10 H.P.

## MODERN BUSINESS IS POWERED WITH ELECTRIC MOTORS

**EMERSON-  
ELECTRIC  
MOTORS**  
For Belted  
Fans and  
Blowers



These motors incorporate all the electrical and mechanical specifications best suited for this service. Split-phase motors, available in 1/4, 1/2 and 1/3 h.p., with resilient mountings and automatic reset thermal protectors. For complete data write for Motor Bulletin No. M109



THE EMERSON ELECTRIC MFG. CO.

ST. LOUIS 21, MO.

**EMERSON**  
MOTORS • FANS



**ELECTRIC**  
APPLIANCES

LEADERS IN THE FAN AND MOTOR INDUSTRY SINCE 1890

STOCK LIST AND REFERENCE BOOK

# UNITED STATES STEEL SUPPLY DIVISION

UNITED STATES STEEL COMPANY



## HEADQUARTERS OFFICES

208 SO. LA SALLE STREET • CHICAGO 4, ILLINOIS

PHONE...CENTRAL 6-9200

**MAIL COUPON TODAY FOR YOUR  
FREE COPY.**

Fill in and mail the attached coupon and your  
1952-53 Stock List will be delivered shortly.

### UNITED STATES STEEL SUPPLY DIVISION

UNITED STATES STEEL COMPANY  
HEADQUARTERS: 208 So. La Salle St., Chicago 4, Ill.

WAREHOUSES COAST-TO-COAST: BALTIMORE • BOSTON • CHICAGO • CLEVELAND • LOS ANGELES  
MILWAUKEE • MOLINE, ILL. • NEWARK • PITTSBURGH • PORTLAND, ORE.  
ST. LOUIS • TWIN CITY (ST. PAUL) • SAN FRANCISCO • SEATTLE



Sales Offices:  
INDIANAPOLIS • KANSAS CITY, MO. • PHILADELPHIA • PHOENIX  
ROCKFORD, ILL. • SALT LAKE CITY • SOUTH BEND • TOLEDO  
TULSA • YOUNGSTOWN

# FOR QUICK, ACCURATE STEEL SELECTION



- This easy-to-use, illustrated steel guide is packed with useful information and features:
- A list of steel, tool and machinery stocks with specifications and technical data on all steels including alternate and tentative standard steels.
- Descriptions of applications of Alloy, Stainless and Carbon Steels plus a tubular product chart showing all types with characteristics and applications of each.
- Comprehensive reference charts and tables as well as 16 tabs for quick product reference and color sections for special products.

United States Steel Supply  
208 S. La Salle Street, Chicago 4, Illinois

Gentlemen: Please send me, without obligation, a copy of  
your 1952-53 Stock List.

Name .....  
Title .....  
Firm .....  
Street .....  
City ..... State .....

**UNITED STATES STEEL**



*Certainly.* TODAY'S HOME OWNERS  
PREFER THE **Lifetime Metal**

## HUSSEY COPPER

And COPPER Building Products

**C. G. HUSSEY & COMPANY**

(Division of Copper Range Co.)

ROLLING MILLS AND GENERAL OFFICES

PITTSBURGH 19, PA.

**7 Convenient Warehouses to serve you**

PITTSBURGH (19).....2850 Second Avenue	CHICAGO (18).....3900 N. Elston Avenue
CLEVELAND (14).....5318 St. Clair Avenue	ST. LOUIS (3).....1620 Delmar Boulevard
NEW YORK (13).....140 Sixth Avenue	PHILADELPHIA (30).....1632 Fairmount Avenue
CINCINNATI (2).....424 Commercial Square	

COPPER  
**HUSSEY**  
BRASS





"You save a lot more  
than space with this  
broom-closet furnace"

**says Hess Swallow,**

**Bryant, Detroit Branch Manager**

"Out of sight, out of mind" is by far the *safest* approach to concealed heating. Such equipment has to be *right*—or it's all wrong, and few can afford to have that happen. Making things *right* is an old Bryant custom, and it certainly has paid off in the way you've accepted our *Vertical Forced-Air Furnace*. It has paid off for *you*, too, in the way this compact, highly efficient gas furnace has performed—in thousands of single dwellings, more thousands of multiple-housing units, over the country. Completely automatic and occupying as little as two square feet of floor space in the smaller sizes, the Bryant Vertical Gas Furnace can help you answer problems of homemakers who need more living space or want to cut construction costs.

Your Bryant Distributor will be glad to give you all the details and help you fit the Bryant Vertical into the plans of your gas heating customers. Or you may write Bryant Heater Division, Dept. 13,

Affiliated Gas Equipment, Inc.,  
17825 St. Clair Avenue, Cleveland 10, Ohio.



**Bryant Model 304  
Winter Air Conditioner**

Gas-fired, forced-air furnace. Six sizes, with inputs from 45,000 to 145,000 Btu per hour. Approved by A. G.A. for all gases. Features *Havilege Heat Exchanger* and *Push-Button Ignition* (city gases only).

**bryant** *best buy*

**IN HEATING,**

**AIR CONDITIONING,**

**WATER HEATING**

**Choice of  
sheet metal  
workers  
because  
WISS  
METAL-MASTER  
SNIPS  
cut  
better,  
faster,  
easier!**

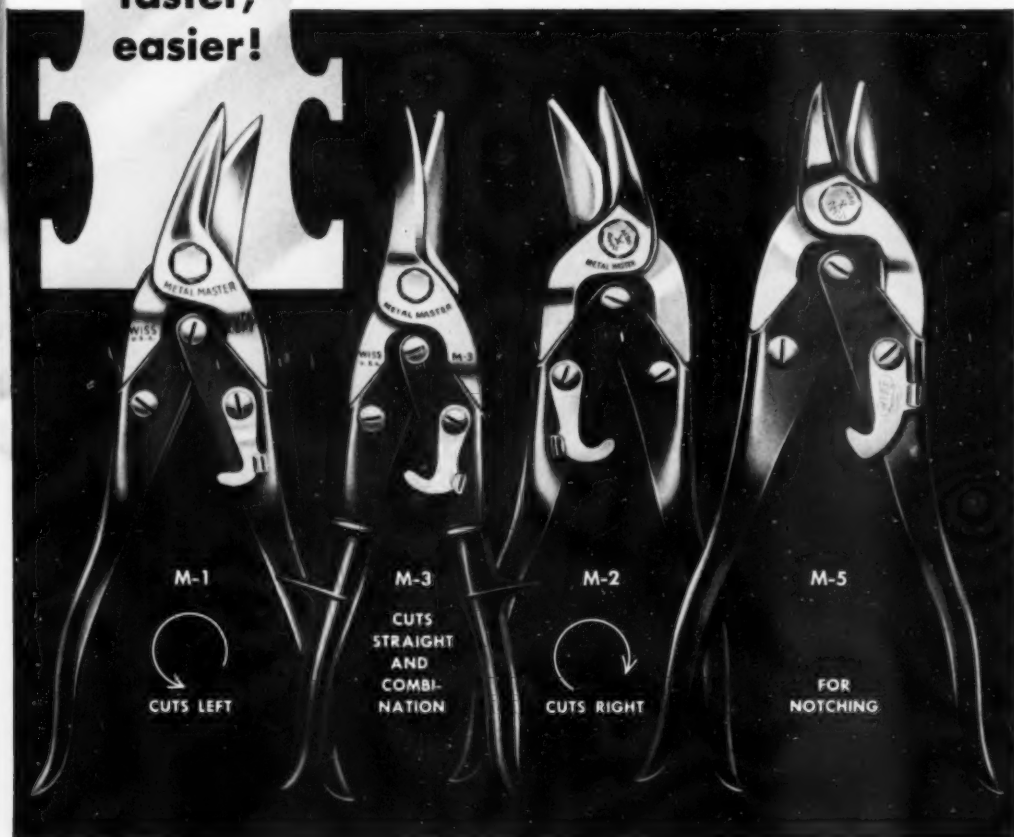
The compound action design of Metal-Masters delivers amazing cutting power. Metal-Master 10" snips cut with about *one-half* the effort required for standard 12½" snips. Hot drop forged of molybdenum alloy steel, fitted with nickel chrome molybdenum bolts for toughness and durability. One edge serrated to prevent slipping.

Complete set of 4 patterns will easily handle almost any cutting requirement of the sheet metal trades. M-1 and M-2 are designed to cut scrolls, circles or the most intricate designs. M-1 cuts to the left. M-2 cuts to the right. M-3 is designed for cutting shallow arcs and for straight cutting. Small, light, easily carried in worker's pocket.

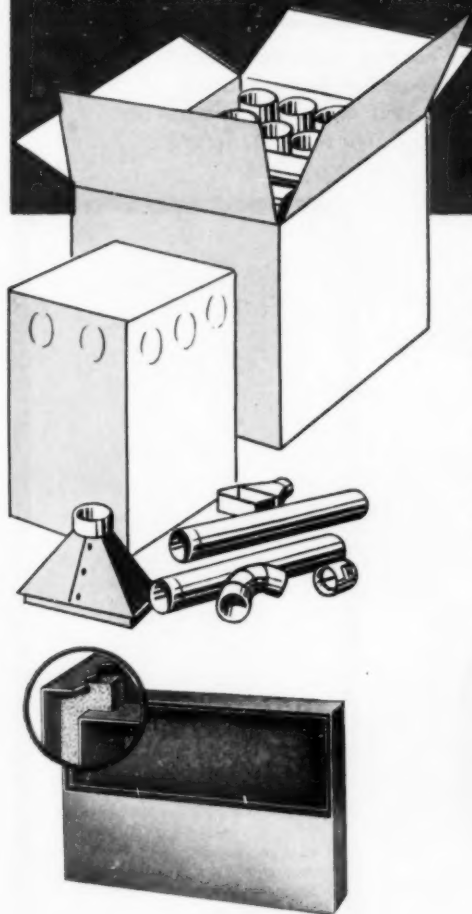
**NEW M-5 BULLDOG HEAVY DUTY SNIPS:** Designed for notching, nibbling and cutting shallow arcs in sheet metal as heavy as 16 gauge. Its sturdy jaws and powerful compound action easily handle the tougher notching work usually done by the heavier, longer-handled snips. Only about 9" long, with a 7/8" cut, they are practically indispensable to workers in the sheet metal, air-conditioning, aviation and roofing industries.

*Quality for more than a Century*

**J. WISS & SONS COMPANY • NEWARK 7, N. J.**

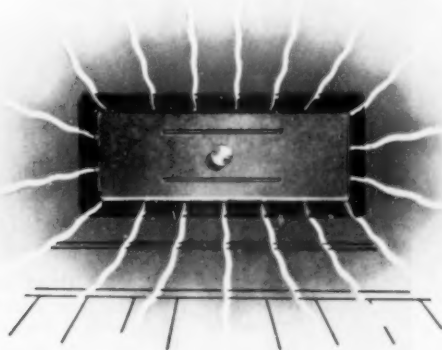


# It's CHAR-GALE for '52 with the



You get *all* the material you need for a 4-inch duct system installation, in the Char-Gale package plan. Included are the new Char-Gale register and register box, as well as the plenum, and all the fittings for a complete installation.

If, instead of getting the complete kit, you prefer cartons of individual fittings, you can order them that way, too. In either case, you get the new Char-Gale register and register box . . . designed to make the 4-inch duct system really work!



Char-Gale's New Register Box is designed for either dry or wet wall construction. It eliminates the need for a plaster frame. The foam rubber gasket provides a positive seal, with no leakage between register and box. Provided for baseboard, sidewall, inside or outside wall installations.

Char-Gale's New Register as it operates in its fully open position. High velocity air from the 4-inch duct is slowed down and distributed evenly in all directions. This diffusion eliminates drafts and hot blasts of air, and means satisfaction to customer and dealer. The Char-Gale register is adjustable, permitting complete balancing at the registers. It has a positive shutoff without noise.

**Write for information, or ask your jobber**

# CHAR-GALE MANUFACTURING COMPANY

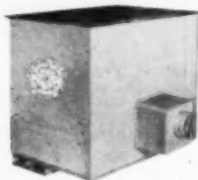
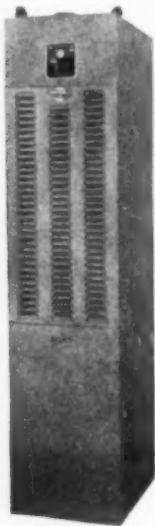


# Makes All 4

Offer your customers heating units that bear the JZ trademark. It identifies home heating units that are easy to sell, make workman-like installation and guarantee customer satisfaction.

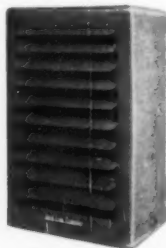
## CENTRAL HEATERS

John Zink Central Gas Heaters are available in Vertical or Horizontal Forced air models. Suitable for installation in attic, closet, basement, utility room, under the floor, or as a suspended heater. Attractively finished.



## FLOOR FURNACES

John Zink Gas Fired floor furnaces are available in 5 conventional and short models with input ratings from 30,000 b.t.u./hr. to 85,000 b.t.u./hr. When equipped with safety pilot and automatic temperature control they are a complete heating plant in a package.



## UNIT HEATER

The John Zink UHS Gas-fired fan type suspended heater is a complete, packaged unit and fully automatic. A. G. A. approved for natural, mixed, manufactured or LP Gas.



## WALL HEATERS

John Zink's new WH-25 Recessed Wall Heater fits standard 2" x 4" stud partitions on 16" stud centers, is barely 58" high. Attractive modern design and finish. Available in standard and radiant styles.

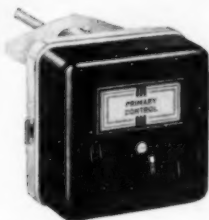
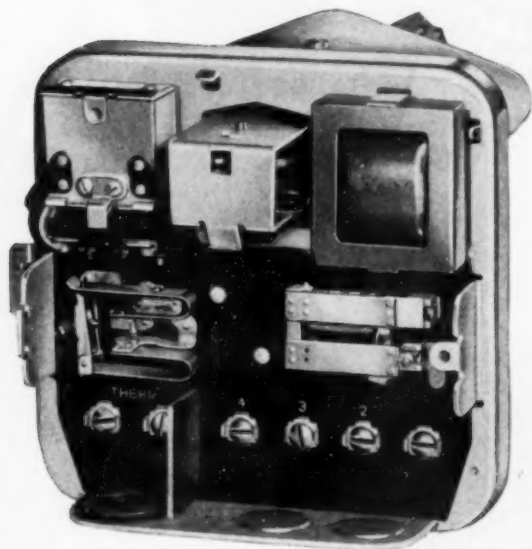


John Zink also manufactures Conversion Burners, Gas Burners, Combination Gas and Oil Burners, Oil Burners, Drum Space Heaters and Burners for Domestic Boilers, Heating Boilers, Domestic Furnaces and Power Boilers. John Zink Burners are protected by more than 50 U. S. Letters of Patent.

It's easy to supply your customers from the John Zink line.

**JOHN ZINK COMPANY**  
4401 South Peoria      Tulsa 5, Oklahoma

# Only Perfex Primary Controls have these benefits:



▲ **SERIES 5200—**  
Low voltage, constant ignition oil burner primary control

▲ **SERIES 5230—**  
Line voltage, constant ignition oil burner primary control



▲ **SERIES 5520—**  
Low voltage, intermittent ignition oil burner primary control

Write for your copy of the Perfex Condensed Catalog.

## PERFEX

CONTROLS YOU CAN TRUST

PERFEX CORPORATION, MILWAUKEE, WISCONSIN  
In Canada, Perfex Controls Ltd., Guelph & Toronto

1. Rugged, dependable stack element . . . easily cleaned, less affected by soot, not easily damaged.

2. Stack switch is line voltage . . . sufficient voltage to overcome dust or dirt.

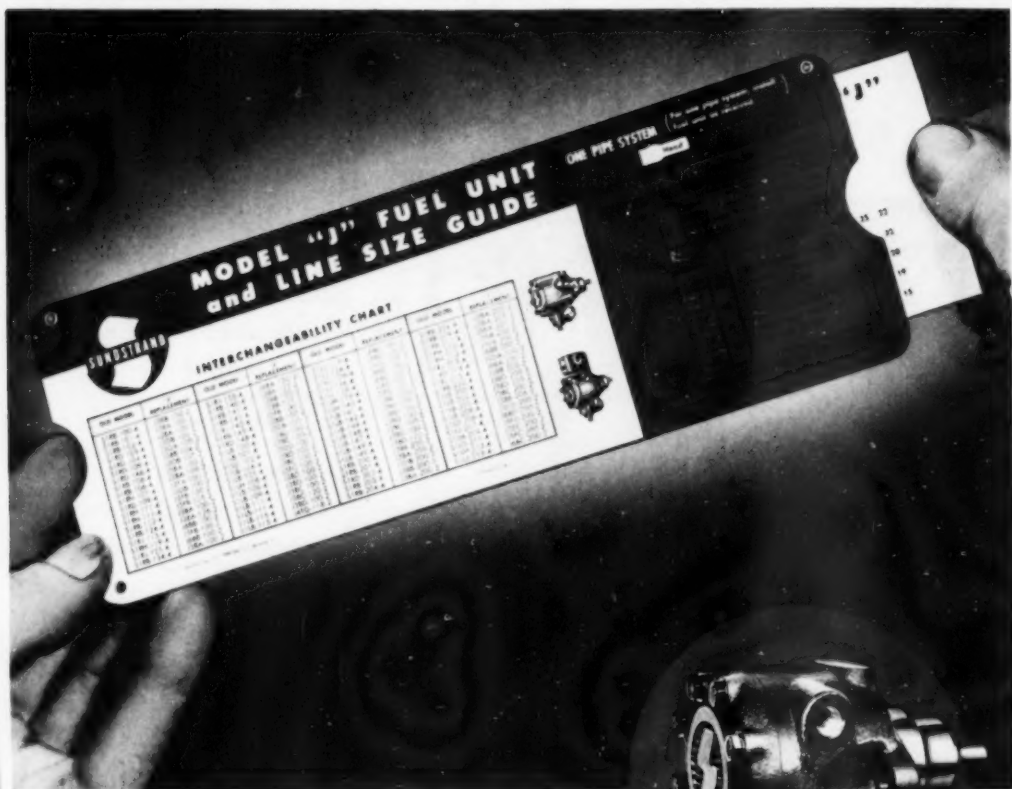
3. Timed ignition (Series 5520) . . . insures positive, consistent ignition period.

4. Stack element and stack contacts can be replaced as a unit if damaged or destroyed.

5. Two-wire circuit . . . simplifies installation. Cannot be hooked up wrong.

6. Ignition timers and ignition switches protected by sturdy steel guard.





## Free! New Sundstrand Fuel Unit and Line Size GUIDE!

It's yours for the asking! Perhaps the handiest tool you've ever placed in your kit is this brand new, easy-to-use Sundstrand Guide.

It operates like a slide rule. Once you know the head on a one-pipe system, the relationship of tank to pump on two-pipe systems, the Guide gives you the maximum

lengths of  $\frac{1}{8}$ " and  $\frac{1}{2}$ " pipe for each size of fuel unit. The single-stage pump is handled on one side, the two-stage unit on the other. And on each side is a helpful interchangeability chart. It's quick, reliable, easy to use. Send a postcard today, or see your service station, for your FREE copy!

### TWO BASIC MODELS SOLVE ALL FUEL UNIT PROBLEMS

It's true!—two new Sundstrand Fuel Units (single- or two-stage, with and without solenoid) give you exact capacity, exact mounting arrangements for all new equipment or replacement installations. Also available—modified units for transfer of gasoline.

INDIVIDUALLY TESTED AND  
CERTIFIED



Made in Canada by  
John Inglis, Ltd., 14 Strachan Ave., Toronto

## SUNDSTRAND FUEL UNITS

SUNDSTRAND MACHINE TOOL CO.  
HYDRAULIC DIVISION, ROCKFORD, ILL.



## ASSOCIATION ACTIVITIES



### Indiana

The Sheet Metal and Warm Air Contractors Association of Indiana announces that official returns indicate Harry Bredemeier of District 1, the official caretaker for 1951 has lost the custody of the association's roaming trophy to V. H. Hazelton and his alert co-workers at Muncie, who have proven their rights as Champion Member Go-Getters of 1951.

### Southern California

The regular meeting of the Institute of Gas Heating Industries, Inc. was held in Los Angeles, Thursday, March 13, president Don S. Will presiding.

Rudolph Harkens announced that he had hoped to have a complete announcement on the subject of unvented heaters for this meeting but that part of the State Housing Act relating to this subject had been submitted to the Attorney General for clarification. He did state, however, that Sections 16900; 18470; and section 41 of Senate Bill 414 did effect the installations of unvented heaters and that it would be advisable for any installer to be completely cognizant of the law before installation was made. He advised the membership that as soon as the information was in his hands he would publish a bulletin on the matter.

William Hoyt has been appointed Insurance Counselor for the institute by the board of directors and that the entire membership could expect a call from him in the near future in connection with the group health and accident program.

Thomas Tatone, 1952 Entertainment Chairman, announced that the date for the 1952 Spring Dinner Dance had been set for May 17, but that the location had not yet been selected.

Mr. Tatone also announced that the next golf date would be May 8 and he hoped to present his plans for a 1952 Institute Golf Tourney to a large number of golfers that day. He said there would be a meeting at the Inglewood Country Club at 12 Noon to discuss this program.

Ralph Yambert, one of the West Coast's most popular speakers, president of Yambert-Prochnow Advertising agency in Beverly Hills, was introduced by Gordon Oury. Mr. Yambert, respected for his knowledge of business and merchandising, chose as his topic, The

Great Gift of Service, his theme was the necessity of honesty in business. Mr. Yambert brought out the fact that it is not so much dishonesty in the ordinary sense, where you steal from your clients through overcharges or by racking up costs where costs should not exist, but dishonesty through false claims, untruthful statements, etc. Such dishonesty has led many customers to disbelieve the statements made by sales representatives in their sales presentations.

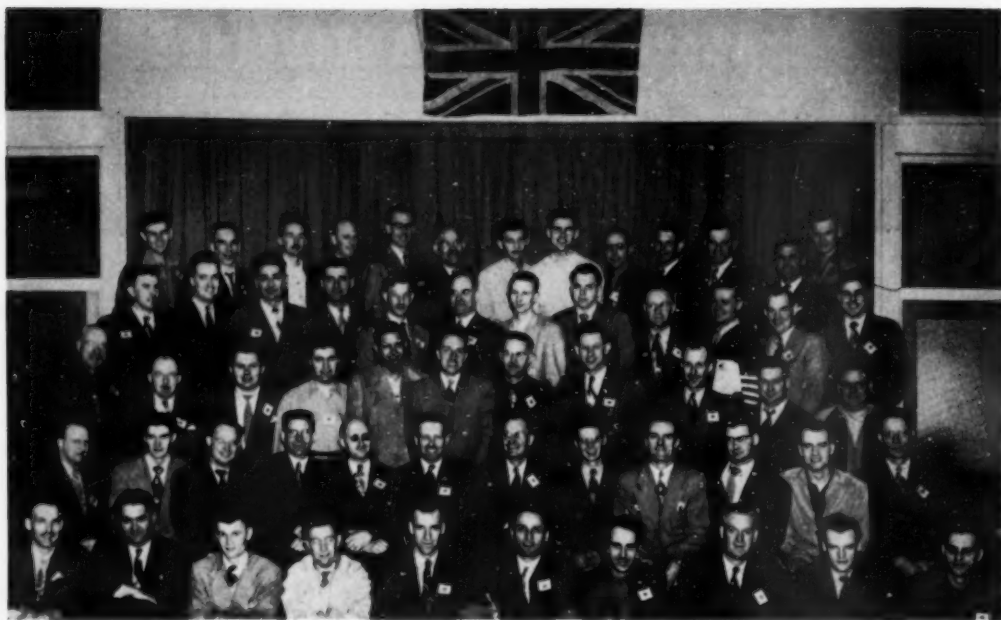
In fact, in a survey taken not too long ago, 75% of consumers stated that all or part of all sales statements were misleading. In selling the result is simply this. That you are selling a piece of merchandise or a service and you're talking to a prospect and the prospect who is listening to you disbelieves all or partially all of what you are saying — your job of selling that article or service is going to be very tough. In fact, it means that you have to do two jobs at the same time. Create confidence out of non-confidence, and sell the product or service once the non-confidence or disbelief has been removed.

Mr. Yambert said, "I don't believe it is necessary to sell in that manner nor to lie to people to sell anything. One of the first lessons I learned was: If you don't have a good product it doesn't do any good to advertise it. I say it is the requirement of every salesman and every advertising man to determine what is the truth."

### Canadian Chapter NWAHACA

Western Canada's school program was completed for 1952. The interest shown by those attending the technical sessions was gratifying to the officers of the home office. Schools were held at Vancouver, Calgary, Saskatoon, and Winnipeg. At Vancouver the school, under the chairmanship of Dave Moir, was held in the Embassy Hall, February 25-29, the attendance was 33. Ken Dinham assisted with the lectures and John Penny delivered the talk on controls. Maurice L. Tucker, secretary-manager of the Sheet Metal Association of B. C. assisted Dave Moir with the school promotion. The association held its annual dinner Thursday night during the week of the school and all attending school were invited to attend.

At Calgary the school was held in Harris Sky Room under chairmanship of Thomas Fleming. Attendance was 45. Members of Mr. Fleming's committee were A. T. Clarke, W. M. Martin, (Edmonton) and Mrs. V. Caughill.



Saskatoon school of National Warm Air Heating and Air Conditioning Association, held March 10-14, 1952, tallied a record representation of 57 members. This progressive group is typical of the many such technical sessions which have been held in Western Canada by the Association.

secretary. Mr. P. M. Meis delivered the lecture on warm air controls.

The new record of 57 at Saskatoon, where the school was held in the Knights of Columbus Hall, March 10-14 was due to the splendid work of Jeff Charlebois and his committee. The committee members were Eric Harding, Bill Kester, Bert Friebance, Douglas Wallis, Lester Pope and Lindsay Holt. The feature of this school was an excellent full page cooperative ad in the Saskatoon Star-Phoenix. In addition to the ad a group picture of those attending the school also appeared in the newspaper. Another interesting activity of the Saskatoon school was an evening tour through the research laboratory of the University of Saskatchewan. This was arranged through the kindness of Gustave Handigard of the University of Saskatchewan and his staff. An informal dinner was held on Thursday evening of the school week.

At Winnipeg March 17-21 the school was held in the Oddfellow's Temple, with William Moss as chairman. 55 delegates attended. Members of the local committee were Oscar Hatch, John Bertram, George Cheantley, Ralph Lloyd, Andy Burton, and Ronald Rogers. An informal dinner was held on Wednesday evening. John Bertram also delivered a lecture on controls.

#### Paul E. Ford

PAUL E. FORD, a member of the board of directors and Corporate Secretary of Penn Controls, Inc., died March 19. Mr. Ford was well known in the heating control field in which he has been active for many years.

#### COMING EVENTS

May 21-23—Gas Appliance Manufacturers Association Annual Convention. Broadmoor Hotel, Colorado Springs, Colo. H. Leigh Whitelaw, Managing Director, 60 E. 42nd St., New York, N.Y.

June 2-3-4—Agricultural and Mechanical College of Texas 1952 Symposium, Instrumentation for the Process Industries. Professor P. G. Murdoch, Chemical Engineering Department, Texas A & M College, College Station, Texas.

June 6-7—National Heating Wholesalers Association Summer Meeting. Ritz Carlton Hotel, Atlantic City, N.J. E. L. Wyman, Executive Secretary, 637 Union Commerce Building, Cleveland, Ohio.

June 18—American Society of Heating and Ventilating Engineers Semi-Annual Meeting. Essex and Sussex Hotel, Spring Lake, N.J. A. V. Hutchinson, Executive Secretary, 6 Worth St., New York, N.Y.

Oct. 27-31—American Gas Association, Annual Convention and Gas Appliance Exposition. Auditorium, Atlantic City, N.J. H. Carl Wolf, Managing Director, 420 Lexington Ave., New York, N.Y.



# TALK ABOUT EXCITEMENT-

*Oh Brother!*

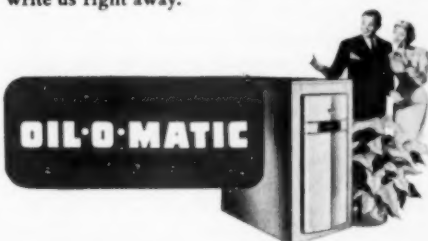
When Oil-O-Matic uncorked this dramatic demonstration of how *Metered Low Pressure atomizes* for greater heat, greater fuel savings, in Philadelphia last month, homeowners and oil heat men alike said, "Here for the first time is visual proof of superiority!"

This startling demonstration is what caused all the commotion. It shows clearly and positively how Oil-O-Matic with *Metered Low Pressure* out-performs all ordinary types of oil burners.

There's a smaller display just like this for Oil-O-Matic dealers. Yes, now you can give your customers this proof-at-a-glance that, in oil heating, they can't do bet-

ter than Oil-O-Matic with *Metered Low Pressure*. Just as you know that it pays to be an Oil-O-Matic dealer.

For full details on the display unit and for information on the most valuable franchise in the heating industry, write us right away.



WILLIAMS OIL-O-MATIC DIVISION  
**Eureka Williams**  
CORPORATION  
Bloomington, Illinois

Better Products. Better Made... for better living!



**OIL-O-MATIC**  
Wall Heating



**GAS-O-MATIC**  
Home Heating



**EUREKA**  
Vacuum Cleaners



**DISPOS-O-MATIC**  
Waste Food Disposer



Speakers table at Ohio State Sheet Metal Contractors Association Convention, Toledo, March 25, 1952. L. to R., William L. Orton, Akron; Robt. W. Spragg, Columbus; Mr. and Mrs. Clarence Christen, Toledo; Mr. and Mrs. William C. Lumm, Toledo; Rev. Herbert Saxman; guest speaker, Mr. Ernest Robert Rosse.

## "What's New in '52" Theme of Ohio Association

**T**HE 38TH ANNUAL Convention of the Ohio State Sheet Metal Contractors Association took place in Toledo March 24-26. Members, guests, and wives in attendance learned that the committee chairmen had organized and planned all the events to assure full benefit and enjoyment for everyone. Topics of importance in today's changing picture were exhaustively covered by the panel of speakers.

The first formal session opened Monday afternoon at Commodore Perry Hotel, at which time President W. E. Bogen introduced the first speaker, Edward Carter, publisher of Snips. Mr. Carter chose as his subject, methods by which sheet metal shops are meeting current problems in the present emergency. Through the use of slides, the speaker made points on how shops in various parts of the country are turning to specialty customized work; such as restaurant steam tables, cookers, dish washers, decorative trim, and store fronts. One important point covered concerns big building heating by the warm air furnace dealers in schools, shops, theatres, and other applications. This business belongs to the warm air contractor and should be gone after in an aggressive fashion.

At the close of his talk, Mr. Carter introduced the executive secretary of the National Heating Wholesalers Association, E. L. Wyman, who spoke briefly on the benefits accruing to the dealer and contractor in working with the wholesaler and the necessity for their continued co-operation.

Chairman Don Dieterle next introduced John L. Newland, Regional Director of Apprenticeship, U. S. De-

partment of Labor. Mr. Newland spoke on apprentice training as the only method possible for the sheet metal shop to maintain at all times an adequate and skilled working force. Also, through building a reservoir of skilled workers in our industry and in all industries, the country is better able to maintain national industrial strength. The speaker stressed the obligation of every employer to assure the fact that his local apprentice training program operates continually at a high level.

In the evening the convention enjoyed a buffet supper and a floor show provided by the salesmen's auxiliary.

The morning session on Tuesday, March 24, opened with a short address by the mayor of Toledo, Lloyd E. Roulet, who officially welcomed the convention to the city.

Introduced next was E. M. Rains, editor of Armco Shop News, Armco Steel Corp., who discussed fabricating stainless steel in sheet metal shops. His talk centered around, SS 430, which is not restricted at present in end use, and is available in fairly ample quantities. Because this type is not alloyed with nickel, its ductile qualities are less than the 18-8 variety of stainless steel. Consequently more care must be taken in fabrication, a liberal radii allowance made on bends, and all forming must be done crosswise to the rolled direction of the sheet. He stated that 90 degree bends should have a bend radius of one metal thickness, and a minimum radius of two metal thicknesses is required on bends of 180 degrees.

Mr. Rains used slides to illustrate his points on fabrication applications, on welded and riveted joints, and



FOR YOUR FINEST JOBS...

# COP-R-LOY

REG. U. S. PAT. OFF.  
THE COPPER ALLOYED STEEL

COPPER ALLOYED STEEL SHEETS

For more than forty years, wise users of galvanized sheets have looked to Wheeling. That's because they know Wheeling sheets are doubly protected against corrosion!

First line of protection: Wheeling's Cop-R-



Loy formula in the base metal. Second line of protection: Wheeling's tough galvanizing. These two Wheeling features team up to make every job a lasting job!

## WHEELING CORRUGATING COMPANY

WHEELING, WEST VIRGINIA

ATLANTA BOSTON BUFFALO CHICAGO COLUMBUS  
DETROIT KANSAS CITY LOUISVILLE MINNEAPOLIS NEW ORLEANS  
NEW YORK PHILADELPHIA RICHMOND ST. LOUIS



on work finishing. He emphasized the extreme care necessary in handling and working stainless to assure a customized product.

C. W. Nessel, chairman of field investigations, National Warm Air Heating and Air Conditioning Association, spoke next on new work concepts of warm air heating. The development of various crawl space systems was traced, and the effectiveness of the heating discussed. He vigorously urged the use of moisture pads when installing this type of system, since they are essential in removing excess humidity. Successful employment of 55 lb roofing paper as a ground pad both in Texas and East Coast installations was mentioned.

The speaker also covered the use of small pipe perimeter systems to heat basement houses in place of high velocity systems.

Milo J. Warner, past commander of the American Legion, led off the afternoon meetings, taking as his topic, our defenses today. He eloquently stressed the need for establishing strong foreign and state policies that will build rather than block the economic strength of the country. To this end he recommended cuts in military spending both abroad and at home while continuing economic aid in some quarters. For the country to maintain leadership on an economic basis he advocated exhaustive research in development of materials and products. Here again, he warned against stock piling because of obsolescence in war materials. To establish a manpower reserve he stressed UMT as of vital importance under present conditions.

John A. Hull, Jr., Regional Director, National Labor Relations Board spoke next on organized labor and outlined the labor acts which have governed employer-employee conduct relations. Under the present Taft-Hartley act, a number of sheet metal shops qualify for jurisdictional aid in settling job and shop disputes.



New officers chosen at the Ohio State Sheet Metal Contractors Association convention in Toledo. L-R: L. B. Budd, Dayton, new director William L. Orton, Akron, president; William C. Lumm, Toledo, secretary; and Clarence Christen, Toledo, treasurer.

Next on the program was D. H. McCraig, Supervisor of Sales Application Engineering, Worthington Pump and Machinery Corp. The speaker traced the development of air conditioning from its inception in 1901, when humidity control in industrial plants formed the first acceptance. This led to air conditioning for human comfort in commercial houses and the present day trend

to air condition residences, which latest phase has been sectionalized in the warmer parts of the country for the larger percentage of jobs. However, the proposition of enlarging this trend in new home construction was put squarely in the lap of the warm air dealer and contractor. This will require a real selling job to architects, builders and home owners.

Mr. McCraig discussed briefly, panel cooling which shows great promise of development through savings in space and materials.



One of the tables at the annual banquet, March 25, 1952. Around the table, L-R: Mr. and Mrs. Scotty Phillips, Mr. and Mrs. John L. Scully, Jr., Mr. and Mrs. Lawrence Mueller, Mr. and Mrs. Chester Zythus; all of the above guests are from Toledo.

Final speaker of the day was J. D. Wilder, Executive Secretary, Sheet Metal Contractors National Association. In discussing the current picture in the sheet metal industry, he touched on the materials situation. The complete reversal of sheet stocks within the past ninety days should lead to the lessening of controls on building approvals. Heretofore 73 per cent of building applications have been refused by NPA. Even with these rigid controls a jobber is required to allot only 30% of his materials to rated jobs, and is allowed to sell the balance where he pleases. This arrangement is in direct opposition to the building restrictions.

Mr. Wilder urged concerted action on the part of the contractor should government agencies again try to take over the duties of the State Public Utility Commission on gas allotment for space heating. In closing, the speaker stressed several important points, such as that employers should ask for deferment of apprentices under the selective service program; the use of forms of agreement between employer and employee with addenda to the agreement to cover all bargaining purposes; finally, that all contractors were urged to bid on every job in his area that is covered by the sheet metal jurisdiction.

This last point is important to establish precedence in disputed jobs.

The annual banquet was held Tuesday evening, followed by a humorous discourse by Ernest R. Rosse.

The final sessions were held Wednesday morning during which association business was covered and the selection of officers took place. The new slate of officers consists of William L. Orton, Akron, president; J. Jacobson, Cincinnati, vice president; William C. Lumm, Toledo, secretary; and Clarence Christen, Toledo, treasurer; one new director, L. B. Budd, Dayton, was also elected.

# Webster Electric Announces its sensational NEW Transformer!



## Check these important advantages:

Large full opening on the top.

Extra free access to the junction box.

Primary can enter by any one of six knock-outs.

No external "bulge" to mar neat appearance.

Uses standard and all special Webster Electric mounting bases for convenient mounting.

Improved internal design for radio interference shielding.

This one transformer meets nearly every installation requirement. It gives the same long-life, trouble-free performance always associated with Webster Electric products.

Oil Heating Equipment Manufacturers, Webster Electric Authorized Service Stations and Heating Wholesalers can supply the new Webster Electric Transformer. Ask about the new service package for dealers. (Be sure to specify Webster Electric when placing your next order.)



**Old-Timer Serviceman Says—**"This new transformer proves again that Webster Electric never lets us servicemen down."

**WEBSTER  ELECTRIC**

**RACINE ♦ WISCONSIN**

"Where Quality is a Responsibility and Fair Dealing an Obligation"

# Pennsylvania Contractors Discuss Current Industry Problems

A series of general forums, focussed on current industrial problems in the immediate field, highlighted the recent Pittsburgh convention of the Sheet Metal, Air Conditioning and Roofing Contractors Association of Pennsylvania. This meeting, regarded as one of the most successful yet held by the organization in recent years, featured several outstanding speakers on pertinent industry themes.

**T**HE 1952 ANNUAL convention of the Sheet Metal, Air Conditioning and Roofing Contractors Association of Pennsylvania, held March 27-29, at Webster Hall Hotel, Pittsburgh, featured a complete program of business subjects aimed at apprising the membership with the current situation. Each subject presented related to practical problems which arise in operating a warm air heating and sheet metal contracting business.

This year's sessions were scheduled as general forums, each devoted to general discussion by the speakers and the membership on specific subjects. A question period at the close of each meeting offered members the opportunity to inquire about the status of current conditions which affect their operation.

The convention opened with a luncheon Thursday noon during which Walter F. Limbach, president, of the local host association, welcomed fellow contractors from throughout the state.

William Orr, Jr., chairman of the management forum Thursday afternoon introduced several speakers from the local Defense Production Administration and Office of Price Stabilization. G. H. Leresche of DPA outlined the avenues open to for procuring materials under CMP. Speaking at a time when decontrol of many basic materials was being considered, Mr. Leresche noted that in all cases the defense program would hold prior claim over all civilian needs. Other remarks by the speaker, prompted by questions from the floor, revealed that CMP is being policed in the construction industry, that steel (gutters) cannot be replaced with copper, but copper can be replaced in like kind; that foreign copper and aluminum are under control and must be considered when determining quantities permitted under the control orders, and that inventory restrictions do not apply to work in process. He noted that manufactured copper gutters and down-spouting purchased as a B product are

not included in the total poundage limitation specified in construction restrictions.

N. C. King and J. B. Kelly of OPS provoked considerable comment by the members on Ceiling Price Regulation 93. Several protested from the floor that the 90 per cent provision in this regulation is a severe operating penalty. Mr. King stated that profit only is restricted to 90 per cent of the mark up which prevailed during the base period. Increased costs in material, labor, and overhead may be charged. Thus the regulation permits full recovery of all costs.



Walter F. Limbach



G. H. Leresche

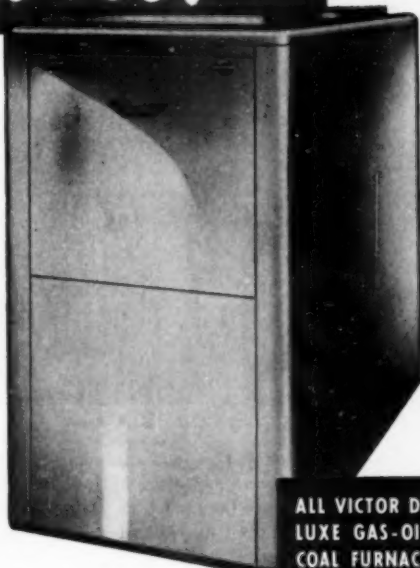
A trade guide prepared by a construction industry advisory committee explaining all pricing procedures in the construction industry is available to contractors. It covers all construction trades and services and may be obtained from local OPS offices. Regulation 93 applies to all contractors in the building trades who employ one or more persons, whether productive or non-productive.

Thursday's activities were concluded with a get-acquainted cocktail party for members, guests, and members of the distributors' and salesmen's auxiliary.

The Friday morning forum, under the chairmanship of Walter F. Limbach, was reserved for discussion on the current status of materials. Representatives from industries which supply basic materials to heating and

# Franchise Advantages that Mean MONEY to YOU!

- A generous, exclusive territory and—VICTOR "FIN" furnaces are sold under no other name.
- A COMPLETE, fast selling line of forced-air and gravity furnaces for Gas, Oil and Coal. A VICTOR for every heating job.
- EXCLUSIVE "FIN" radiation plus other sales appealing features of superiority. They sell easier!
- 50-50 Co-operative advertising program and merchandising with sales tools that SELL.
- A COMPLETE, free engineering service.
- Quality construction, advanced design mean faster installation, fewer "call-backs". You sell permanent heating satisfaction.



ALL VICTOR DE-  
LUXE GAS-OIL-  
COAL FURNACES  
WARRANTED  
FOR 15 YEARS

## VICTOR

QUALITY FURNACES SINCE 1890

### INVESTIGATE VICTOR

It's a wonderful, money making line... complete with gravity and forced air GAS, OIL and COAL Hi-Boys — Low-Boys — Winter Air Conditioners including the Deluxe 4 way — 4 fuel furnace line. There are nearly 100 models for gas, oil and coal assuring successful competition for ANY heating job... and you deal with a company whose more than 60 years experience gives you the best. There is no substitute for quality PLUS experience. Investigate VICTOR NOW!

**A COMPLETE LINE OF BLOWERS, CONVERSION BURNERS, STOKERS AND ACCESSORIES**

## HALL-NEAL FURNACE CO.

1322-42 NORTH CAPITOL AVENUE  
INDIANAPOLIS 7, INDIANA

*Tear off...  
Fill out...  
Clip on Your Letterhead  
and Mail Today!*

HALL-NEAL FURNACE CO.  
1322-42 N. Capitol Ave., Indianapolis 7, Ind.  
Gentlemen: Please send me full information on the  
VICTOR franchise and complete VICTOR line.

Name \_\_\_\_\_

Address \_\_\_\_\_

State \_\_\_\_\_

City \_\_\_\_\_



sheet metal contractors revealed that an increasingly competitive market has become established, encouraged by expanding supplies.

E. F. Melcher, Philip Carey Co., noted the trend in modern architecture as contributing to a growing market for roofing products. He pointed to the large roof surface of one story ranch houses as an example of this trend. He also foresees a trend to larger and better equipped houses than have prevailed during the emergencies of the past 10 years. He supported this contention by pointing to a new pattern of financial advancement that has become established among new homeowners. He said this new crop become prospects for larger and better quarters after they have built up sufficient equity for a substantial down payment on the larger investment.



W. P. Zeiler



C. E. Sperik

Predictions of stable markets and expanding production to meet demand were supported by C. E. Sperik, Revere Copper & Brass Corp., W. P. Zeiler, Armco Steel Corp., and J. H. Dowling, Follansbee Metal Warehouses.

It was brought out in general discussion that aluminum is in good supply. Decontrol of this metal in six months was prophesied. Galvanized was considered as being in good supply; nickel alloy stainless steel, short; and while there is no anticipated improvement in supplies of copper products, it was revealed that some thought is now being given to decontrolling this metal.

F. W. Batten, Manufacturers Light & Heat Co., and C. L. Yost, Peoples Natural Gas Co., continued with this optimistic theme by revealing a general easing in gas restriction in the Pittsburgh area. Both speakers agreed that the need for issuing approvals is subsiding. Mr. Batten said that the need to control new gas heating installations in recent years is readily understood by observing the additional load on his company's mains. In 1946 it was serving 15,000 home heating customers and by 1952 this figure had increased by approximately 100,000. Mr. Yost said that applications for new installations reached a peak two years ago and since have fallen off to the point where the volume of current applications is about 40 per cent less.

Both speakers also agreed that the gas utility industry will soon find it necessary to promote gas heating actively.

President A. J. Sabathne presided at the Friday luncheon session during which J. D. Wilder, executive secretary, SMCNA, discussed current problems affecting the industry.

A second management forum Saturday morning, chair-

manned by Joseph Proie, featured talks on business operations. Earl Davis, Davis Bros., outlined expenses which should be included when determining overhead. Louis Demmler, Demmler Bros., contributed constructive suggestions on maintaining business volume in a stabilized market by reviewing the methods suitable and available for promoting the sale of heating and sheet metal products.

Mr. Demmler appealed to his listeners to recognize service as the best possible type of promotional activity. "Service," he said, "is a real headache to us in the distributing business. There is the distraught homeowner who phones and tells us, 'We have one of your furnaces which has been operating fine for 10 years, but something has gone wrong. The fellow who installed it has died and other contractors around town say they won't touch it because they didn't put it in.' Or even worse is the owner who informs us that the dealer who installed his heating system refuses to come and service the equipment because he is too busy on other work. Don't think I'm talking about the hit and run dealer. I'm talking about good, reliable, honest, capable, and otherwise intelligent contractors. Why do they pass up all these opportunities to advertise, promote, create goodwill, keep old customers and create new ones by the simple device of calling promptly on prospects, making installations the way they know they should be made, and taking care of service call immediately. There, gentlemen, you have thousands and thousands of dollars worth of the best advertising and it doesn't cost you a cent."

The closing activities of the convention included a Saturday luncheon, a business session, and annual banquet. The 1953 annual convention will take place in June, and the convention city agreed upon by the members is to be Erie, Pa.

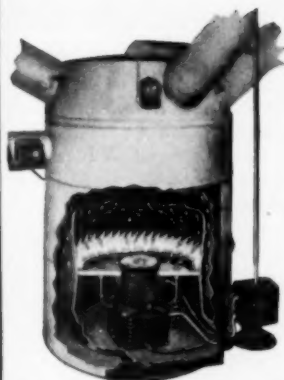
The following slate of officers was elected for the year 1952-1953:

President	Charles L. Luppold	Reading, Pa.
1st Vice-President	John Henke	Erie, Pa.
2nd Vice-President	Harold R. Reese	Sharon, Pa.
3rd Vice-President	Harold Zimmerman	Wilkes-Barre, Pa.
Secretary-Treasurer	E. W. Liebermann	Ambridge, Pa.
Sergeant-at-arms	J. E. Harper	Monaca, Pa.
Immed. Past Pres.	A. J. Sabathne	Altoona, Pa.

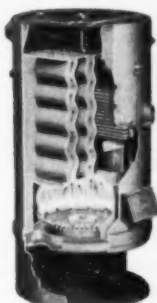
Directors were elected to serve as follows:

1952	
Neil Coleman	Erie, Pa.
H. A. Sabathne	Altoona, Pa.
E. W. Scarborough	Pittsburgh, Pa.
1953	
R. J. Cronan	Reading, Pa.
F. J. Ostroski	Scranton, Pa.
Louis Trost	Erie, Pa.
1954	
A. R. Hoffman	Sharon, Pa.
W. L. McBride	Beaver, Pa.
J. E. Harper, Jr.	Monaca, Pa.

**Easy to Sell!**  
**Easy to Install!**  
**Easy to Service!**  
**TORIDHEET**



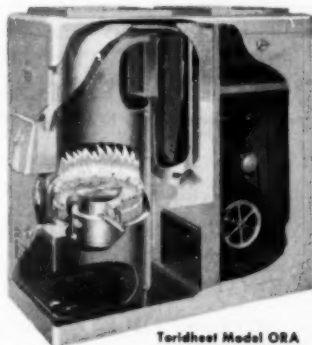
Toridheat Model F in warm air furnace



Toridheat Model ORU  
rotary fired boiler



Toridheat Model ORM rotary fired  
water heater



Toridheat Model ORA  
winter air conditioner

**The Pioneer rotary wall flame oil burner**

The customer-proved economy of TORIDHEET rotary wall flame equipment makes it your best bet for sales and satisfaction. TORIDHEET equipment sells easily and *stays sold*.

- Economical — saves up to 50% on oil
- Burns catalytic oil efficiently
- Quiet and clean
- Correct flame placement
- Fully automatic
- Trouble-free — one moving part
- Backed by 27 years of research and development

... For conversion jobs and in complete heating plants

Other Toridheat units for every need... every budget... Gun Burners... Gun Fired Boilers and Furnaces... Gas Conversion Burners and Gas Fired Furnaces

**CLEVELAND**  
**Toridheat**  
 AUTOMATIC HEATING

**TORIDHEET DIVISION**  
 CLEVELAND STEEL PRODUCTS CORPORATION  
 7318 Madison Avenue  
 Cleveland 2, Ohio

Affiliated Canadian Manufacturers: Conroy Mfg. Company, Ltd., Catherine St., St. Catharines, Ont.

# EQUIPMENT DEVELOPMENTS

## Improved Sheet Metal Hand Tools

INTERSTATE DROP FORGE CO., Milwaukee, Wis., is re-introducing a line of heat treated, drop forged handles, plates and jaws.

Drop forgings have been used in place of castings to reduce weight, provide greater strength, and prevent side plates from twisting.

A patented gear principle makes possible a simplicity in design.

Catalogs of replacement parts, as well as the complete line of sheet metal hand tools, bolt cutters, strap shears and hot line wire cutters are now available. AA 177



Improved sheet metal tool



High speed grinder

## Lightweight Grinder

BALMAR CORP., Baltimore, Md., has introduced a new light weight, high speed disk grinder for one hand operation with a speed of approximately 8,000 rpm. The precision instrument, designed to withstand continuous duty, grinds, sharpens, and shapes all metals, as well as woods, plastics and ceramics to a high degree of accuracy. The speed efficiently produces smooth finishes and highly polished surfaces on these materials.

Because of its small size and light weight it fits easily in a maintenance kit, and can be used in close quarters.

## For Your Convenience to Cut Out and Mail

We will ask the manufacturer to send full particulars about the equipment and literature described.

Be sure to circle the items for which you wish complete information.

5-52

177 178 179 180 181 182 183 184 185 186 187 188 189  
190 191 192 193

258 259 260 261 262 263 264 265 266 267 268

Name ..... Title .....

Company .....

Street .....

City ..... Zone ..... State .....

Mail to AMERICAN ARTISAN, 6 N. Michigan Ave.,  
Chicago 2, Ill.

such as repair shops where already assembled parts need to be ground or reshaped.

Eight special attachments enlarge the scope of the tool so it can be used for hole burring, hole polishing, rotary filing and cutting, solder cutting, and even as a small bench grinder. It mechanizes hand operations that otherwise would require time and labor.

It is furnished with three composition disks, 4 in. diameter, 3/32 in. thick, of No. 36, 80, and 120 grit; a screw driver; 3/16 in. pin wrench, and 6 ft. oil resistant cord. AA 178

## Small Home Conversion Burner

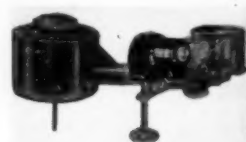
MILLER CO., Meriden, Conn., is now offering a conversion burner for small homes that is an adaptation of their mechanical draft vaporizing oil burner.

This new burner has a maximum firing rate of .75 gph and features a newly developed gas pilot that eliminates oil pilot problems and need for customer operation of cleanout rod.

It also features a newly developed T/M blower unit that provides thermal overload protection for both motor and transformer, and factory wiring of the transformer, motor, and blower to the oil valve. The addition of transformer winding to the motor eliminates the possibility of motor and transformer being incorrectly wired at time of installation.

Factory setting of air and oil flow rate also simplifies installation and need for complicated adjustments.

Burner can be used in combustion chambers up to 18 in. where heat loss is not in excess of .75 gph input requirement. AA 179



Above: Conversion burner



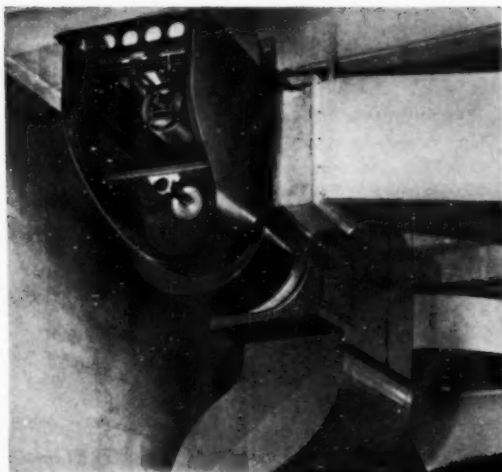
Right: Squaring shears

## Air Powered Squaring Shears

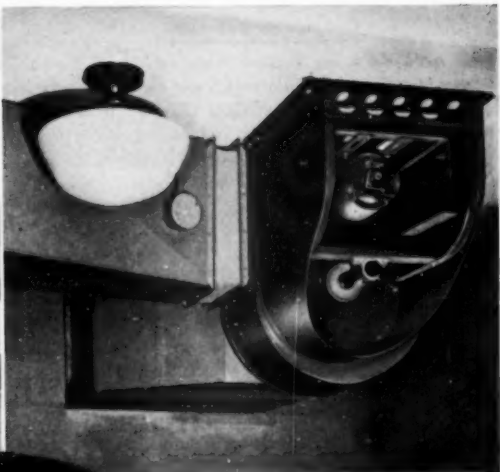
NIAGARA MACHINE & TOOL WORKS, Buffalo, N. Y., has introduced a new line of air power squaring shears for sheet metal shops. Simplified construction has eliminated flywheels, gears, clutches, motors, and electrical controls reducing initial cost and maintenance.

Air from the average shop's system with pressures of 70 or 80 psi is all that is necessary for operation. In shops without air, a small air compressor and surge tank will suffice.

The holddown gives clear visibility of cutting line. A flexible air hose for treadle permits operator to trip shear from any convenient location.



A Century fractional horsepower motor on an overhead blower in a National Guard Armory used to exhaust air from the firing line of rifle range.



Another Century fractional horsepower motor used on an overhead blower in the same Armory to exhaust air from a ticket office and men's wash room.

## Are Widely Used On Air Moving Equipment..

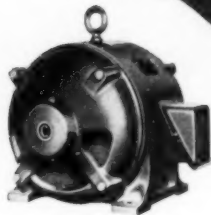
### ...To Assure Unusual Freedom From Vibration and Quiet Operation

Century motors are widely used on furnace blowers—ventilating systems—attic fans—unit heaters—unit coolers and many other forms of air moving equipment.

These features make Century motors ideal for your use: They start and run smoothly and quietly . . . Sturdy construction means long life . . . Insulation resists dampness . . . Modern appearance blends with equipment . . . An Authorized Century Service Station is near to give you fast service.

These typical examples show how Century motors are applied to help you get all the performance that is built into the equipment they drive.

Century manufactures a wide line of single phase and polyphase, as well as D.C. motors. Sizes range from  $\frac{1}{8}$  to 400 h.p. A variety of types each with many different specifications make it easy to choose the right motor to give the best results.



Specify Century Motors for Top Performance of the equipment you buy or for replacement.



**CENTURY ELECTRIC COMPANY** • 1806 Pine Street, St. Louis 3, Missouri • Offices and Stock Points in Principal Cities

### Coupon on page 100

All main parts are formed from welded steel plate designed to give maximum strength and rigidity, insuring a longer life of accurate straight line cutting without twist, spring or deflection. Adjustable ways are made from non-metallic laminated plastic to avoid scoring and cutting, reduce wear, and maintain accurate alignment. Further details can be furnished. AA 130

### Automatic Heating Plant

MAJESTIC CO., Huntington, Ind. A new, packaged, automatic heating plant designed to bring fully automatic gas or oil heat within the necessary limits of cost and space for the builder of small basementless homes. It will heat, humidify, filter, and circulate warm air to every room.

Available in either up flow or down flow models, this new 22 in. sq furnace is suited to any the modern types of heating systems, such as perimeter, crawl space, panel-air and all the variations of those new developments.

Both models feature the air suspended blower, delivering from 700 to 1000 cfm.

An oil burner, or one for all gases, is interchangeable. These fuel burning assemblies are mounted on a heavy metal plate and inserted like a drawer into the front of the furnace. Simplified connections, including electrical, are all provided for on front of unit.

Rated 80,000 Btu with .75 gph oil input, and 65,000 Btu with 82,000 Btu gas input, the new furnace has sufficient capacity for a wide range of small homes. The primary heat chamber is surmounted by a secondary heat exchanger which together give a total of 22.68 sq ft of heating surface.

Heavy 20 gauge, cold rolled steel sheets form the furnace casing. Since all connections can be made from the front, the unit may be placed against a wall or in a corner of a basement or utility room. AA 131

### Fiberglass Duct Insulation

OWENS-CORNING FIBERGLAS CORP., Toledo, Ohio, announces the development of fibrous glass duct insulation designed to prevent condensation on air conditioning ducts which carry cool air in warm, humid areas.

The material stops condensation by enclosing the duct in thermal insulation having a built in vapor barrier of asphalt and kraft paper.

The new type insulation consists of fine fibers of glass, bonded together by a resin into a rigid, rectangular insulating board with clean cut edges. It does not add excessive weight to the duct system, inch thick panels weighing only about 1/2 lb per sq ft.

The insulation may be applied in a single operation, and is furnished in 24 by 48 in. panels in thicknesses of 3/4, 1, 1 1/2, and 2 in. It may be cut easily and accurately to any shape.

For exposed ducts, a decorative finish is desirable, and if used where exposed to weather or abuse a protective covering is necessary. AA 132

### New Furnaces for Basement Installation

DUCAHE HEATING CORP., Lincoln Park, N. J., has introduced two new furnaces for basement installation. Rated 75,000 and 100,000 Btu at the plenum, these oil fired winter air conditioners are furnished with or without extended jacket.

Cabinets are finished in gold enamel, and constructed of reinforced heavy gauge steel. Heat exchange compartment is insulated with corrugated asbestos, aluminum foil faced.

Heat exchangers are of heavy gauge steel all welded construction. The hot gases from combustion chamber travel upward and through the horizontal heat transfer tubes, affording the maximum of heat transfer surface before reaching the stack.

An observation door of machined steel has an asbestos gasket to assure tight fit.

A resilient mounted 1/4 hp, 60 cycle motor has a V belt drive and tension adjuster. AA 133

### Power Line Exhaust and Pressure Fan

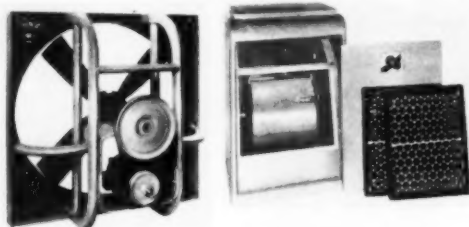
CHELSEA FAN & BLOWER CO., INC., Plainfield, N. J. Power line ventilating fan for use against static pressure.

This heavy duty belt driven, propeller fan has been designed for industrial applications, duct work, mine exhaust systems and filtering units where large volume of air is required under static pressure.

It is belt driven, and equipped with non overloading cast aluminum airfoil type propellers. The parts are completely ball bearing and motors are totally enclosed.

The units are available in sizes from 24 to 48 in. with air deliveries from 5,000 to 28,000 cfm.

Air delivery ratings are determined by the standard test code of the Propeller Fan Manufacturers' Association and ASHVE. AA 134



Ventilating fan

Blower unit

### Warm Air Blower Units

LAU BLOWER CO., Dayton, Ohio, is offering an improved line of blower filter package units with cfm ranges from 400 to 1300.

Model 3106 is a smartly designed, standard package  
(Continued on page 133)





# You profit **TWICE** when you hitch this Automatic Control to every space heater sale

## Your customers won't be without Automatic Control . . . once you show them!

### What brand do you sell?

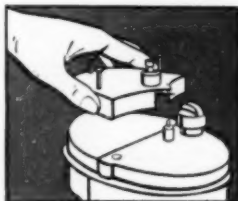
ALLEN'S	INTERNATIONAL
BARNES	JUNGERS
BENNER-NAWMAN	KEMAC (Canada)
BETTER	KLEER-KLEEN
COLE HOT BLAST	LACO
COLEMAN	LONERGAN
COLEMAN (Canada)	MAGIC CHEF
CREST (Canada)	MARCHAND (Canada)
CREST-AIRE (Canada)	MONARCH
CUSTOM-AIRE	MONARCH (Canada)
DOMESTIC	MONOGRAM
DRACO FIREBALL	NESCO
DUO-THERM	NORGE HEAT
ENTERPRISE	ORAN
ENTERPRISE (Canada)	PERFECTION
ESTATE HEATROLA	PREWAY
EVANS	QUAKER
EVEN-TEMP	QUAKER (Canada)
FAWCETT TORRID-OIL (Canada)	SAFEBAY
FEISS (Canada)	SCOTSMAN
FINDLAY (Canada)	SIEGLER
FLOOR-O-LATOR	SILENT FLAME
FLORENCE	SUPERFLAME
GILLEN	THARRINGTON
H. C. LITTLE	THERMO-PRODUCTS
HERCO HEAT FLO (Canada)	TORRID-AIRE
	VIKIMATIC
	WASHINGTON FRUGAL

Here's the way to pocket an extra profit on the sale of every oil burning space heater. Your customers *want* the comfort and convenience of thermostatically controlled heat. They *want* its fuel-saving economy. *They can have these benefits* inexpensively if you'll sell this compact accessory with every heater.

The A-P. Comfort Control is designed especially for use on any space heater on the list at left. It's easily installed, and as inexpensive as a subscription to your customer's favorite newspaper. *Show it, demonstrate it — and you'll sell it.*

## Easy to install

Anyone can install the A-P Comfort Control. Takes only a few minutes. No complex wiring. Kit furnished complete. Choice of electric or mechanical type—for popular makes of oil-fired space heaters.



## A-P CONTROLS CORPORATION

(formerly Automatic Products Company)

2452 N. 32nd Street • Milwaukee 45, Wis. • In Canada: A-P Controls Corporation Ltd., Cooksville, Ont.

FOR DRILLING HOLES IN CONCRETE, STONE, BRICK



**MAN  
OF THE MONTH**

**HE DOES A WEEK'S  
WORK IN A DAY...**

**WITH A *Thor* ELECTRIC HAMMER**



Thor electric hammer with star drill speeds hole making in concrete brick and stone up to **TEN TIMES!** Complete line of accessories available for cutting, gouging, shaping, chipping, scaling, peening, bushing and the like. See your Thor distributor today. **INDEPENDENT PNEUMATIC TOOL CO., AURORA, ILLINOIS**

**EXCLUSIVE THOR**

*Sling Shot Drive!*

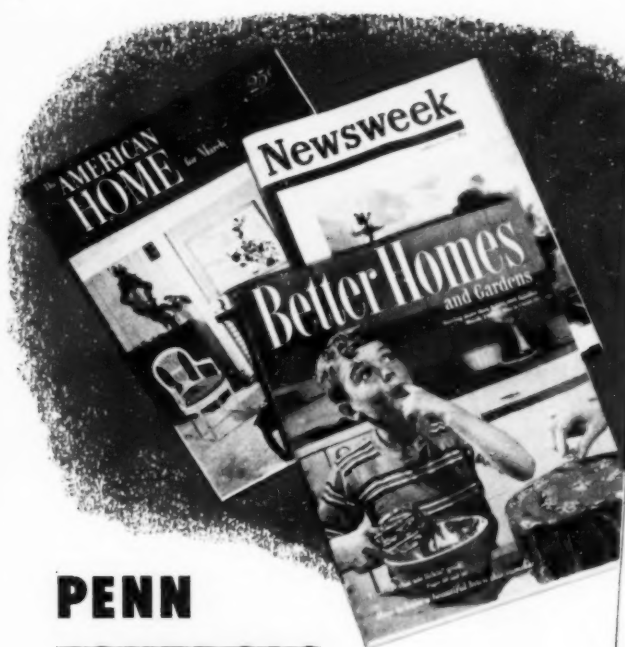
**ADDS POWER  
ABSORBS SHOCK**

Shock-proof rubber connection whips hammer piston back and forth 1600 times per minute, acting as both power accumulator and shock absorber. **NO RECOIL** for operator or motor!

*Thor*

**TOOLS**

**ELECTRIC • PNEUMATIC**



## PENN CONTROLS are nationally advertised to help you sell more!

Your heating prospects will see and read PENN's appealing ads throughout the year in the above national magazines. These ads will inform homeowners how to eliminate HOT-n-COLD LIVING by calling you... *their heating dealer!*

And you'll sell more by showing prospects how automatic heat controlled by the PENN heat-anticipating thermostat is their best buy for unsurpassed heating comfort. So... recommend and install PENN heating controls. **Penn Controls, Inc., Goshen, Indiana.** Export Division: 13 E. 40th Street, New York 16, N. Y., U. S. A. In Canada: Penn Controls Limited, Toronto, Ontario.

Watch for the PENN advertising in the  
May, June, September, October and November  
issues of the above national magazines.

# PENN

## AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES



## WHY MACHINE-CAST SOLDERS SPEED UP SHEET METAL WORK

Federated CASTOMATIC® Solders are machine-cast . . . produced *only* by Federated Metals on patented electronically controlled machines . . . while ordinary bar solders are hand-cast. For this reason CASTOMATIC Solders work better, more easily and with much more satisfactory results.

CASTOMATIC Solder is a dross-free solder . . . harmful oxides are excluded from the product because air is kept from the molten metal in the pressurized casting system. As a result CASTOMATIC Solder has a high fluidity and is easier to work.

Because it is extra fine-grained, CASTOMATIC Solder has no voids or segregation to make melting uneven, thereby slowing down your sheet metal work. Every bar of a given analysis melts at the same temperature . . . assuring faster, freer work without costly interruptions!

CASTOMATIC Solder comes in all standard sizes and compositions through your local jobber.

*Federated Metals Division* 

AMERICAN SMELTING AND REFINING COMPANY • 120 BROADWAY, NEW YORK 5, N. Y.

# This house sells air conditioning

This is a Carrier Weathermaker Home. It is built to take advantage of air conditioning. It gives the buyer better living. It can sell for you.



The architects—Carroll, Gridale & Van Alen is a well-known Philadelphia firm whose recent work includes the Youth Study Center on Benjamin Franklin Parkway and the Terminal Building, Philadelphia International Airport (now in progress).



## The Carrier Weathermaker

is designed for a duct system like that used for forced warm air heating. The Weathermaker cools and heats. It burns gas for heating... uses a sealed electric refrigerating unit for cooling. It is only a little larger than an ordinary furnace.

## better value

When you sell the new Carrier Weathermaker Air Conditioner, you can give your buyer the advantages of a Weathermaker Home. You can give him more usable space per building dollar because in a Weathermaker Home rooms need only one exposure. Windows aren't needed on every wall. Movable sash isn't required. The floor plan can be a simple rectangle.

## lower price

When you sell the new Carrier Weathermaker Air Conditioner for a Weathermaker Home, you can give the buyer a better price... and you can assure him of lower operating costs. The buyer won't need as much air conditioning capacity — because he can set and forget his air conditioning. And the Weathermaker Home is designed to reduce the heat load — and operating costs.

## more profits

When you sell the new Carrier Weathermaker Air Conditioner for a Weathermaker Home, you're selling an exclusive. And you're selling an exclusive that gives the buyer extra benefits. You can demonstrate that he can have a better home. You can demonstrate his money savings. Isn't that the kind of deal that you'd like to be in on? Then write today!

# Carrier

## AIR CONDITIONING • REFRIGERATION

For 50 years—the people who know air conditioning best

### CARRIER CORPORATION

308 South Geddes Street, Syracuse, N. Y.

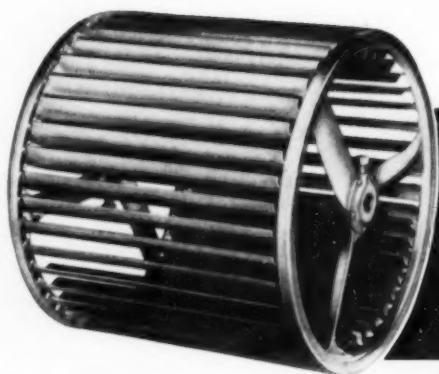
Please send me the profit story on the Weathermaker Air Conditioner and the Weathermaker Home.

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_





**ARE YOU OVERLOOKING  
the "Acres of Diamonds"  
IN YOUR OWN PLANT?**

**50% OF YOUR BLOWER DOLLAR  
CAN BE KEPT IN YOUR OWN PLANT**

***This Means Extra Profit***

You do not have to increase your overhead one cent. Simply take advantage of any lag time in production to build your blower assemblies.

**Use the Morrison Plan**

Morrison will design for you, blower units that will fit space requirements and give sufficient capacity. They will come to you knocked down. Sides, bearings and drives can be furnished if desired.

*Write for the new Morrison Catalog. It tells  
you the whole story*

**MORRISON PRODUCTS, Inc.**

*16816 Waterloo Road*

*Cleveland, Ohio*

**NEW**  
CUTS COST UP TO  
**35%**

# DOOR and PARTITION GRILLE

**NO SEE-THRU**

● Cut-a-way view shows new auxiliary frame. Quickens installation—makes a smoother appearance.



**NEVER BEFORE SUCH A DOOR GRILLE FOR THE MONEY.** It's so far ahead in design, construction and performance that it's guaranteed to open your eyes.

Skilled Airfoil designers drew, tested and built it to give architects, contractors and engineers the *finest door grille possible*. It's made to **OUTLAST—OUT PERFORM.**

First—it's *more rugged*. Will withstand heaviest use and abuse for years and years. Second—it's *low in cost*, competitively priced. Third—it's *good looking*. Will add beauty every time it is installed. Fourth—*louvers are absolutely secure*. Do not rattle when door is slammed.

● **HEAVY GAUGE STEEL. REINFORCED ON EITHER SIDE.**

● **ADAPTABLE TO ANY DOOR WIDTH...MADE TO ANY SIZE.**

● **73% FREE AREA.**

● **ONE-PIECE FRAME.**

● **CUTS DAMAGE AND REPLACEMENT COSTS. NO EXPENSIVE CALL BACKS.**

## Airfoil

**AIR CONDITIONING OUTLETS**

**FREE**



**CHECK TYPE OF GRILLE ON WHICH INFORMATION IS DESIRED**

- |   |  |
|---|--|
| <input type="checkbox"/> Air conditioning outlets         | <input type="checkbox"/> Perforated metal and ornamental grilles |
| <input type="checkbox"/> Return air grilles and registers | <input type="checkbox"/> Industrial grilles                      |
| <input type="checkbox"/> Volume controllers               | <input type="checkbox"/> Special made-to-order grilles           |

**TITUS MANUFACTURING CORP., WATERLOO, IOWA**

- |  |
|--|
| <input type="checkbox"/> RUSH information on new door and partition Grilles. |
| <input type="checkbox"/> Send complete catalog.                              |
| <input type="checkbox"/> Send literature on above checked items.             |

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

**GET THE COMPLETE INFORMATION ON THESE AND ALL AIRFOIL GRILLES TODAY**

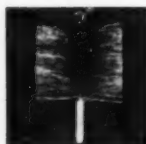
# SCHAEFER BRUSHES

## - MILWAUKEE -

**"BUY SCHAEFER----IT'S SAFER"**

Buying ALL your brushes from SCHAEFER, you can be sure of one high standard of performance, durability, service, and value. You'll enjoy easier inventory control — and you get the *correct* brush for every need, because of Schaefer's complete line and complete stock.

In Flue and Boiler Brushes — insist on Schaefer's "SILVER BRITE" rustproof spring steel wire, developed for longer wear, more effective cleaning.



**SCHAEFER**  
Rectangular Flue Brushes  
No. 8-415—2"x4"x1 1/4"  
No. 8-416—3"x5"x1 1/4"



**SCHAEFER**  
Boiler Brushes  
No. 8-393—1 1/2"x4"x3 1/4"  
No. 8-394—2 1/2"x6"x4 1/4"  
No. 8-395—3 1/2"x8"x5 1/4"



**SCHAEFER**  
Boiler Brushes  
No. 8-396—1 1/2"x4"x3 1/4"  
No. 8-397—2 1/2"x6"x4 1/4"  
No. 8-398—3 1/2"x8"x5 1/4"

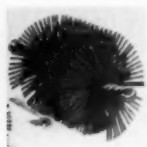


**SCHAEFER**  
Boiler Brushes  
No. 8-399—2"x4"x3 1/4"  
No. 8-400—2 1/2"x6"x4 1/4"  
No. 8-401—3"x8"x5 1/4"



**SCHAEFER**  
Single and Double  
Spiral Flue Brushes

No. 8-432—Single Spiral  
1" to 4" dia.  
No. 8-433—Double Spiral  
1" to 4" dia.  
No. 8-434—4" for small  
flues, 1/2" to  
1" dia.



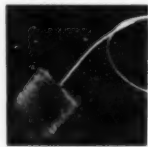
**SCHAEFER** Round Flue  
Brushes of Single Spiral,  
Flat Steel Wire

No. 8-436—1" to 4" dia.



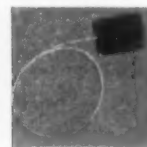
**SCHAEFER** Rectangular  
Flue Brushes of Flat  
Steel Wire—Spiral

No. 8-428—2"x3 1/4"x4"  
No. 8-425—2 1/2"x5"x4 1/2"



**SCHAEFER** Furnace  
Brushes of Silver Brite  
Rustproof Steel

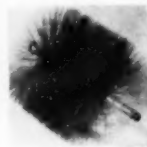
No. 8-442—3", 4", 4 1/2",  
5" with 5 ft.  
handle.



**SCHAEFER**  
Fibre Furnace Brushes

Selected Baseline fibre,  
flexible wire stem, 1", 5",  
6" dia., 48" and 60"  
handles.

No. 8-444-445



**SCHAEFER** Chimney  
Cleaning Brushes

No. 8-66—6", 7", 8", 10",  
and 12" dia. round style  
or Black Tempered Brush  
Wire.

No. 8-66—6", 7", 8", 10",  
and 12" dia. oblong style  
of Flat Tempered Steel  
Wire.

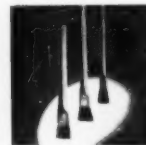


**SCHAEFER**  
Wire Wheel Brushes  
Solid Center Type of  
crimped steel wire.  
No. 276—6" dia. x 1 1/2"  
face.  
No. 278—8" dia. x 1 1/2"  
face.  
No. 280—10" dia. x 2"  
face.



**SCHAEFER**  
Handy Wire Brush

No. 816—For roughing,  
soldering etc., 6" long  
tempered steel wire  
trimmed 1 1/2"



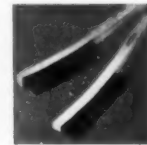
**Tin Handle Acid or  
Dope Brushes**  
Selected grade bristles in  
tin handle. Width, 3/4",  
3/8", 1/2", 3/16"



**T. W. Flat Acid Brushes**  
Timers, soldering brush,  
boycott, filling, 1 1/2",  
width, 1 1/2" overall.  
Twisted wire handle.

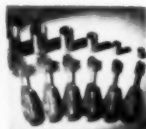


**Radiator or Condenser  
Tube Brushes**  
Twisted in wire handle,  
selected hair or bristle.  
Wide range of sizes.  
No. 10—3/8" dia. x 2" brush  
x 1/2" overall.  
No. 11—1/2" dia. x 3" brush  
x 1/2" overall.



**SCHAEFER** Curved  
Handle Wire Brushes

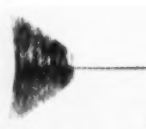
No. 819—Oil tempered  
steel wire, trimmed 1 1/2",  
hardwood block, 1 1/2" long.  
Brush 6", 2, 3 or 4 rows.



**Schaefer Copper Tube  
Fitting Brushes**  
Clean fittings faster,  
easier, safer in 9 sizes  
for I.D. or Nominal Fitting  
Bore from 1/8" to 2"



**Schaefer Copper Pipe  
Cleaning Brushes**  
For cleaning outside of  
rubbings in I.D. Bore of  
3/8", 1/2", 3/4" and 1"



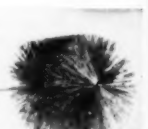
**SCHAEFER** Vacuum Cleaner Brushes  
No. 1005—Baseline Fibre Brush, 10 1/2" dia. tapered  
to 2" dia. x 6 ft. long—48" handle with  
threaded nipple at end.  
No. 1009—Baseline Fibre Brush, 10 1/2" dia. brush x  
10" long. Handle 30" with threaded nip-  
ple at end.



**Wire Fine Brush and Extension Handles**  
4 ft. Handles with Nipple and Coupling.  
5 ft. Handles with Nipple and Coupling.  
6 ft. Handles with Nipple and Coupling.



**Wire Fine Brush and Extension Handles**  
4 ft. Handles with Nipple and Coupling.  
5 ft. Handles with Nipple and Coupling.  
6 ft. Handles with Nipple and Coupling.



**Wire Fine Brush and Extension Handles**  
4 ft. Handles with Nipple and Coupling.  
5 ft. Handles with Nipple and Coupling.  
6 ft. Handles with Nipple and Coupling.

Write for SCHAEFER Boiler and Flue  
Furnace Catalog No. 650, or for informa-  
tion on any special brushes you may need.

# SCHAEFER BRUSH MFG. CO.

117 W. Walker Street

Milwaukee 4, Wisconsin



## G-E Air Conditioned \$12,500 Homes Start New Era For Sheet Metal Industry

Demand for warm air heating tremendously expanded by General Electric's low cost year 'round comfort system

A development featuring 3-bedroom \$12,500 homes, complete with G-E Year Round Air Conditioning was opened on March 23rd at East Ridge Park, Dallas, Texas. This development attracted nationwide publicity in leading magazines and newspapers.

"Public interest is so tremendous it is hard to believe; 25,000 people visited site on opening day," according to a spokesman for Laughlin & Silver, Lewis & Lamberth, builders of the 210-home development.

Now, no home can be truly modern without all-season home comfort.

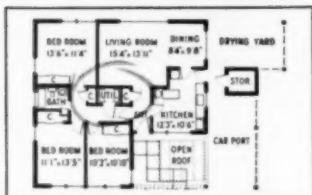
More and more home buyers and owners will be demanding year 'round air conditioning, because General Electric research and engineering have brought the cost within the reach of millions.

### THE G-E SYSTEM OFFERS THESE ADVANTAGES:

- G-E Furnace, either gas- or oil-fired, supplies warm, filtered air when it's cold; keeps air moist when it's dry.
- G-E Home Air Conditioner cools the entire home when it's hot, wrings dampness from the air on muggy days.
- Both units use the same duct system.
- The system is ideal for G-E Air-Wall Heating—the all-metal, small duct, perimeter warm air system which helps you stretch your metal supplies over more installations.
- The G-E Home Air Conditioner may be added later in new homes, or put in most existing homes with warm air systems. This broadens both your new construction market and gives you the opportunity to call back on your old customers with a new offer for all season comfort.

**DEALERS!** G-E Year 'Round Home Air Conditioning is only one of the many reasons why a G-E Home Heating and Cooling franchise offers such tremendous and growing profit possibilities.

**GENERAL  ELECTRIC**



**NOTE HOW THE HOME** is literally "built around" the compact G-E Furnace—either gas- or oil-fired—and home cooling unit in this plan of one of the 210 homes. Some ducts can be used for heating as well as cooling. Architect was George M. Marble of Dallas.



**REVOLUTION IN COMFORT** is pointed out in the model home by John B. Lowe, President of G-E's wholesaler in Dallas, Texas Distributors, Inc. G-E cooling unit is on left, G-E Furnace on right.

**FREE**



General Electric Co.  
Air Conditioning Div.  
Sec. AA-5  
Bloomfield, N. J.

Please send me free information on  
G-E Year 'Round Air Conditioning.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

ZONE \_\_\_\_\_

STATE \_\_\_\_\_



Triplife Flo-Warm  
Furnace



Gas Forced Air  
Flo-Warm Furnace

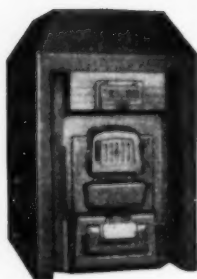


Oil De-luxe Flo-Warm  
Furnace

# THE WILLIAMSON HEATER COMPANY

*Complete  
Line*

WARM AIR  
HEATING  
and WINTER  
AIR CONDITIONING



Triplife Square Cased  
Gravity Furnace



Gas, Oil, or Coal—there is a Williamson Warm Air Furnace for any size installation. Beautifully styled, built for life-time service, and designed for fuel economy, the models shown represent 60 years of research—and dealer satisfaction. For greater sales, easier installations, more enthusiastic customers and bigger profits investigate the Williamson Complete Line. Write for details—

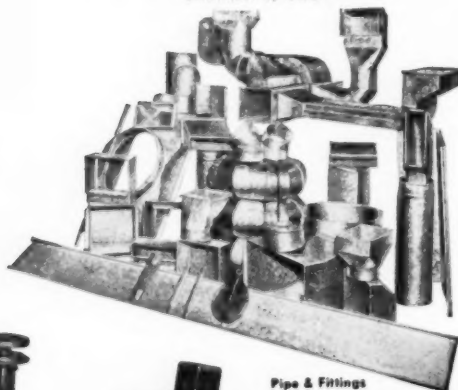
THE WILLIAMSON HEATER COMPANY  
Dept. AAS, 3500 Madison Road  
Cincinnati 9, Ohio



Triplife Round Cased  
Gravity Furnace



Gas Gravity Furnace



Pipe & Fittings



Oil Hi-Boy Furnace



Gas Burner



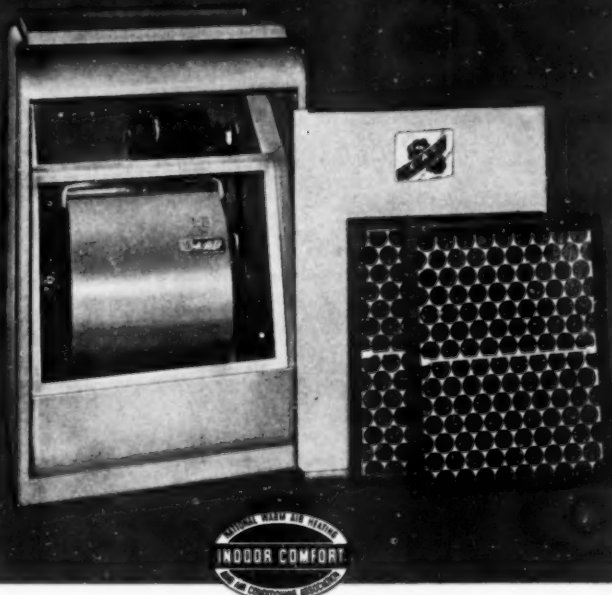
Oil Burner



Stoker



# **So You Want Package Units!**



**LAU has  
always been  
the leading  
manufacturer  
of this  
type unit!**

## **Complete size ranges...to meet**

**\*C. A. C. requirements... models 8096, 8106, 8126, 8124**

You want smart, attractive design—this is it! Sizes to meet your needs! Compact enough to occupy minimum space! Cabinets are assembled with blowers attached! Easily removable access door! Two oversize filters! Quiet, efficient and economical to operate!

- for furnace sizes 18" to 28" bowl
- c.f.m. 600 up to and including 1800
- most efficient filters on the market
- will accommodate a range of from 66,000 to 196,000 btu/hr bonnet output at 100° temperature rise

### **\*C.A.C.**

These LAU units are built for Continuous Air Circulation. For full explanation of the principles involved in C.A.C. please refer to MANUAL 6— from National Warm Air Heating and Air Conditioning Association, 145 Public Sq., Cleveland 14, or write us direct.

**Complete Line of Larger Package Units...up to and including 25-inch Blower**

**THE LAU BLOWER COMPANY • Dayton 7, Ohio**

# "SKIL Drills and Drivers beat all others in production and durability!"

—says **T. C. NORMAN**, general manager,  
**MASON AWNING & MFG. CO.**, Dallas, Texas

"For ten years, we've found our SKIL Drills and Drivers outperform all others. They're far superior in design and construction!" Such high praise of SKIL quality comes from T. C. Norman, general manager of this 26-year-old manufacturing firm. The Mason Awning and Manufacturing Company uses their 25 SKIL Drills and Drivers in all phases of production and installation of metal awnings.

This is typical of the strong preference for SKIL tools whenever comparison is made. SKIL users learn quickly to rely on the *extra* quality, power and dependability associated with SKIL portable tools.



**SKIL Drill Model 47**

1/4" drill. Compact, heavy duty. Capacity in hardwood: 0" to 1/2"; in steel: 0" to 1/4". Standard speed: 1800 r.p.m. Faster and slower speeds available. Overall length: 7 1/4". Weight: 3 1/2 lbs.

See your Distributor for complete information or call your nearest SKILSAW factory branch.



John Hearn uses a Model 47 SKIL Drill in a final assembly operation. "More power and better balance make SKIL Drills easier to handle with faster operation," he says.

**SKIL**  
PORTABLE TOOLS

SKIL Products are made  
only by SKILSAW, INC.  
5033 Elston Ave., Chicago 30, Illinois

SKILSAW Factory Branches in 34 principal cities  
In Canada: Skiltools, Ltd.  
2601 Dundas Street West, Toronto 9, Ontario

# Hand-Picked Prospects for You



Day after day, the people in *your* territory who are going to build their own new homes are located by the world's largest construction news gathering organization.

Then . . . a book of catalogs, illustrating and describing the varied products needed for new homes, is mailed to these prospects of yours. This book—Home Owners' Catalogs—is used and kept while these prospects are planning what they will want to buy for their new homes. It is important to you that the products you stock, show and sell are completely described to these buyers *before* they make their final decisions.



That is why The Henry Furnace Company distributes its folder, "Moncrief—The Finest in Automatic Home Heating Equipment," in each copy of Home Owners' Catalogs. Moncrief *knows* this is the way to do a thorough pre-selling job for you. Moncrief *knows* these home-planners are outstanding prospects for you because they must buy the kinds of things you sell.

**Whatever you sell you can get the names and addresses of hand-picked prospects in your territory.**

## MAIL COUPON TODAY

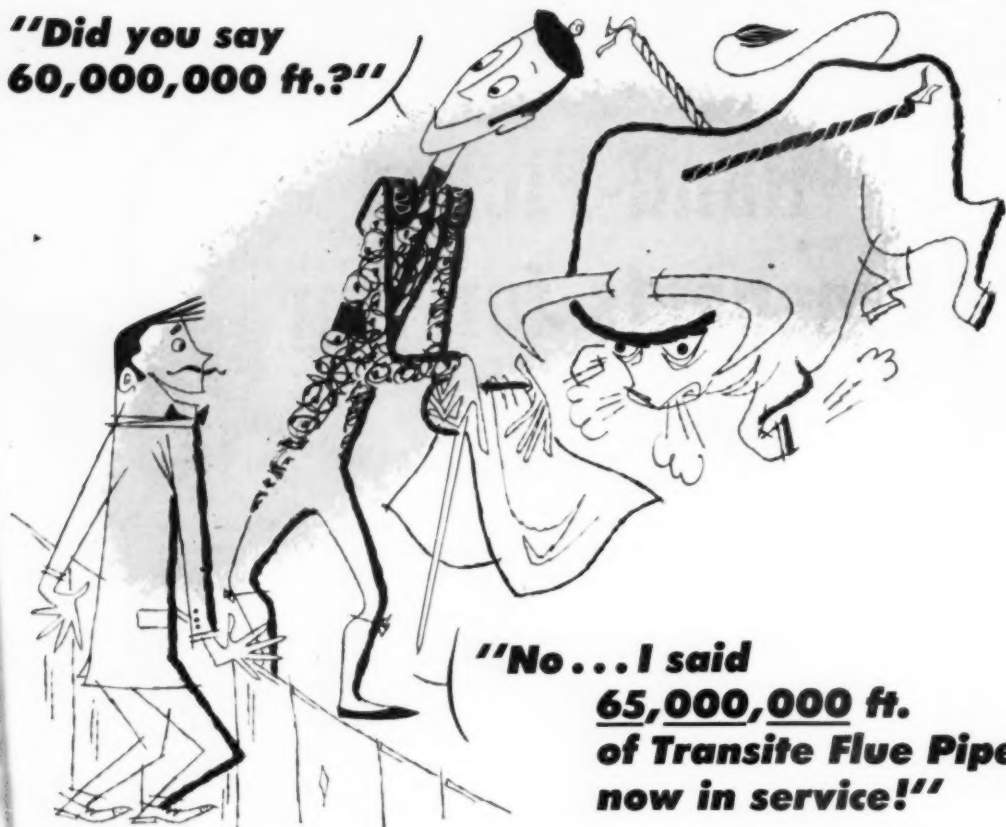
Tell me how I can get the names and addresses of prospects for new-home products . . . *in my territory*. (Available in local marketing areas within 37 eastern states only).

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

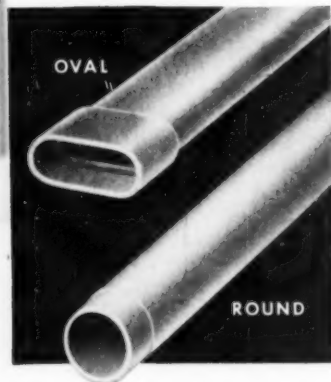
**HOME OWNERS' CATALOGS**

Dept. HF, 119 West 40th St., New York 18, N. Y.

**"Did you say  
60,000,000 ft.?"**



**"No... I said  
65,000,000 ft.  
of Transite Flue Pipe  
now in service!"**



**Y**OU CAN BE SURE that there are excellent reasons why this modern asbestos-cement flue pipe has been the leader for more than twenty years.

Ask the men who regularly install Transite® Flue Pipe why they—and their customers—prefer it. This is what they'll say:

1. **Transite Flue Pipe** does an efficient, dependable venting job that helps build reputations for quality work.
2. It **needs no crimping**, no hole-punching, no special tools, no nuts or bolts for making joints.

3. It **won't deform**, dent or bend out of shape...makes a rigid, solid, *safe* installation.

4. The **Transite tapered couplings** assure quick, positive alignment.

5. The **complete line** of Transite fittings meets any job requirement... makes it easy to follow approved venting practices.

Use Transite on your next job and prove to yourself that this modern flue pipe means more profitable gas venting jobs for you—and lasting satisfaction for your customers. For further details, write Johns-Manville, Box 60, New York 16, N. Y.

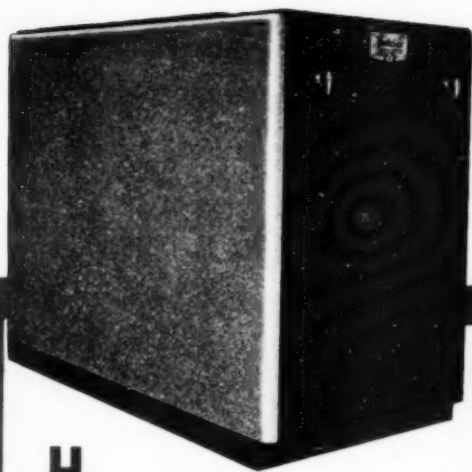
\*Reg. U. S. Pat. Off.

*Transite Flue Pipe is the only flue pipe for domestic gas appliances listed by Underwriters' Laboratories that has been continuously approved since 1932.*



**Johns-Manville TRANSITE FLUE PIPE**

**FOR VENTING DOMESTIC GAS-BURNING APPLIANCES**



## Put Yourself IN THE BUILDER'S SHOES



**H**ere's a sales-packed suggestion that will help you get a bigger share of the home building market. Put yourself in the builder's shoes. Find out what he's really looking for in the heating equipment he buys. You'll find it to be four big features: 1. Consumer acceptance. 2. Modern design. 3. Trouble-free, efficient performance. 4. The right price.

Thatcher equipment has all these features—and more . . . consumer acceptance through consistent advertising and sales promotion activities . . . up-to-the-minute engineering features for long, trouble-free operation and

efficient performance . . . modern exterior design for added eye appeal . . . and the model and size for practically any housing need—at a price that will put you on your builder-prospects buying list to stay!

Yes, Thatcher, the oldest and one of the most reliable names in heating, has the line that was constructed with you and the builder in mind.

Take the first step toward getting a bigger share of the market. Write Thatcher Furnace Company, Garwood, New Jersey and let us send you all the facts in our new complete catalog.

### THATCHER HAS ALL THE SALES ADVANTAGES YOU WANT—AND NEED!



**MINIMUM Sales Resistance . . .** You can say "Yes" with enthusiasm to every question about modern features that spell cleanliness, safety, convenience, quality, dependability and automatic, care-free operation.

**MINIMUM Installation Time . . .** Each unit is the result of constant progress in design—the last word in easy erecting—to assure you less work, less time, less cost.

**MAXIMUM Appearance . . .** Streamlined design—handsomely styled in deep maroon or maroon and grey to blend with color schemes anywhere.

**MAXIMUM Selection . . .** No matter what the heating problem (gas, oil or coal) Thatcher has the correct model and size to meet the need.

**MAXIMUM Sales Support . . .** It's yours from all departments—including a "get up and go for greater sales" advertising and sales promotion program.

**MAXIMUM Profit . . .** In the original sales, and in greater volume because of word-of-mouth praise and prestige of Thatcher equipment. That means more and more sales come your way with less selling effort.

WINTER AIR CONDITIONERS . . . FURNACES . . . BOILERS . . . OIL BURNERS . . . GAS BURNERS







**No Electricity . . . No Chimneys . . . No Ductwork Required!**



**Permanently Sealed Outside Venting  
Provides All These Exclusive Advantages**

- Easier, Faster Installation Between Wall Studs—On Outside Wall Where Good Heating Belongs
- No Chimneys, Electricity, Ductwork Needed
- Savings on Fuel Costs—Up to 20%
- Elimination of Utility Room—Valuable Savings in Basement, Floor and Closet Space
- Zone-Controlled Comfort. Individual Thermostat Permits Room-to-Room Adjustment of Heating Flow
- Positive Seal of All Combustion Products from Heated Room Air
- No Moving Parts to Maintain or Replace

Saf Air Model 991-14, 14,000 BTU/Hr. 18" x 24" x 4"  
Other convectors and forced air models 20,000, 35,000 BTU

Approved by American Gas Association



**I**T'S NEW! IT'S TRUE! "Safety-Sealed" gas heating brings you a fully automatic gas heating system—with no electricity, no ductwork, no chimneys required. A compact, modern system specially designed to save you time, work and money on installation, materials and service!

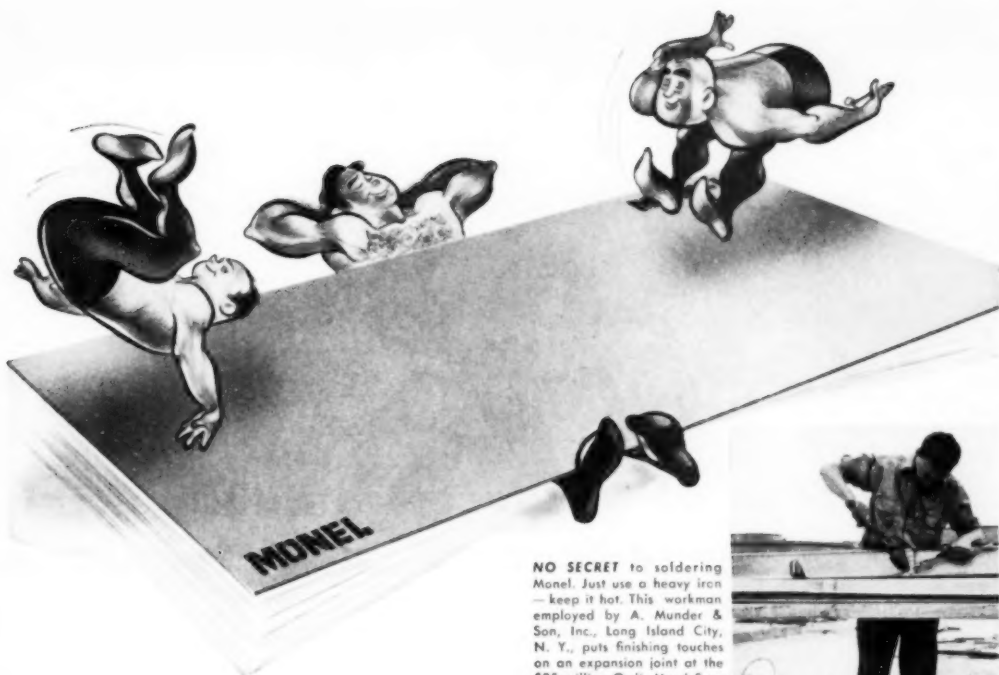
By burning gas in a sealed combustion chamber, then venting all combustion products outside after use, room-size "Safety-Sealed" units eliminate the need for ductwork, electricity, chimneys of any sort. Gives you a clean, dependably safe, trouble-free heating system that answers the needs of hundreds of prospects right in your own community.

Only Stewart-Warner "Safety-Sealed" gas heating brings you all these advantages. Why not investigate? Cut costs instead of corners. Use and recommend "Safety-Sealed" gas heating—with profit—on every job!

**STEWART Warner**  
**DOMESTIC HEATING**

**STEWART-WARNER CORPORATION • South Wind Division**  
**1514 Drovers St., Indianapolis 7, Indiana**

**WRITE NOW** for complete, free information and specifications on the complete line of Stewart-Warner "Safety-Sealed" Gas Heating Systems. Select dealerships are available in some territories. Address inquiries to Dept. H 52, 1514 Drovers Street, Indianapolis 7, Indiana.



**NO SECRET** to soldering Monel. Just use a heavy iron — keep it hot. This workman employed by A. Munder & Son, Inc., Long Island City, N. Y., puts finishing touches on an expansion joint at the \$25 million Owl's Head Sewage Disposal Project, Brooklyn, N. Y. Plant also uses Monel for gutters, waterstops, flashings, rainwater drains and fascia.



A roofing sheet to remember...

## because it takes all kinds of twists and turns

Soft-temper Monel® Roofing Sheet is easy to work with.

No problem at all to cut. And you can form Monel into intricate shapes — even make sharp bends — without cracking it.

You can do a neat soldering job with Monel, too, by pre-tinning the sheets in the shop. Then, when you make the actual installation, a heavy, hot iron is all you need to insure a tight, perfect seam.

With strong, corrosion-resisting Monel overhead, your customers get the kind of roof they

want. Summer heat and winter cold can't hurt it. And neither can high winds nor heavy loads. Once up, a Monel roof is there to stay!

Right now — because there's so much demand for nickel alloys in the defense program — the Government has stopped the use of Monel for building purposes.

But there's nothing to stop you from getting information about Monel. Send today for your free copy of the helpful bulletin, *Monel Roofing Sheet — Basic Application Data*. You can be sure the time will come again when its handy reference chart and time-saving tips will be needed.

THE INTERNATIONAL NICKEL COMPANY, INC.

67 Wall Street, New York 5, N. Y.



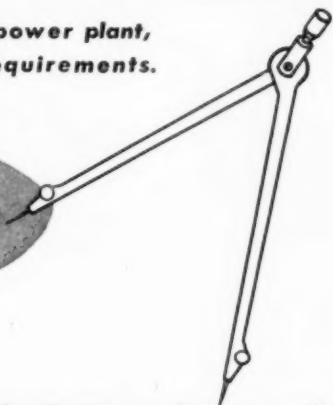
# MONEL

... "For the Life of the Building"

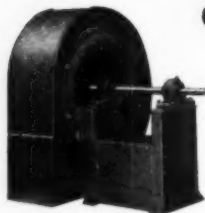
**HEADQUARTERS FOR AIR HANDLING AND CONDITIONING EQUIPMENT**

*... to meet all types of industrial, power plant,  
commercial and public building requirements.*

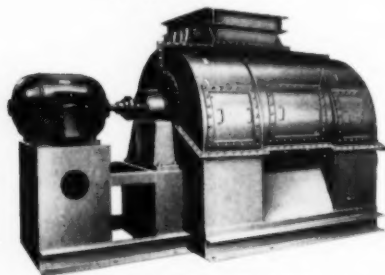
# CLARAGE



## **The Sign of Resourceful Engineering and Economical Performance**



**INDUSTRIAL FANS**—for blowing or exhausting. Large range of capacity sizes—suitable for many applications.



**MECHANICAL DRAFT FANS**—both forced and induced draft. Heavy-duty construction for continuous operation at peak loads.



**CAST IRON FANS**—for industrial services. Unique construction assures extra long life when handling corrosive gases.

What you're looking for in air handling and air conditioning you are likely to find at Clarage Fan . . . highly efficient, dependable equipment — job engineered to your particular needs . . .

It's nearly 40 years since we started building fans, blowers and allied products. We have had ample time to temper research with experience, engineering with sound practice, manufacturing to actual operating in-the-field demands . . .

You can profit by dealing with Clarage. We have an established reputation for getting things done right . . . As evidence of what we mean, 97 of the 100 largest American corporations are users of Clarage fan equipment. Need we say more?

### **CLARAGE FAN COMPANY**

631 PORTER ST., KALAMAZOO, MICH.

SALES ENGINEERING OFFICES IN ALL PRINCIPAL CITIES

IN CANADA: 4285 Richelieu St., Montreal  
Canada Fans, Ltd.

## **You Can Rely on Clarage**

# HEIL

## Proved Efficiency can improve your sales



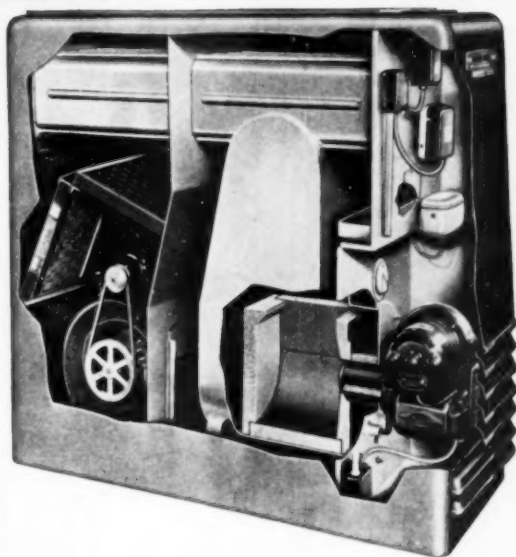
### Proved Better Combustion

HEIL's slanted, rounded combustion chamber promotes better burning, higher CO<sub>2</sub>. Government and independent laboratory tests prove it.

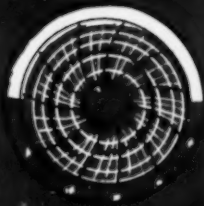


### Proved Better Sizing

The famous HEIL single-passed burner is matched to the unit, flame is right size, right shape. When you order a HEIL burner, it stays that way.



You can show your prospects ample **PROOF** of HEIL's efficiency. You can see and show how HEIL design makes better use of the fuel, how HEIL can give better, more uniform heating. You can demonstrate how HEIL quality construction cuts upkeep. With HEIL, you have a better unit—a unit that is provably easier to sell. Write now for details. You'll like dealing with HEIL.



### Proved Better Heating

HEIL's slanted, rounded combustion chamber gives you more uniform, more efficient heating. HEIL's slanted, rounded combustion chamber gives you more uniform, more efficient heating.



### Proved Better Operation

HEIL's slanted, rounded combustion chamber gives you more uniform, more efficient heating. HEIL's slanted, rounded combustion chamber gives you more uniform, more efficient heating.

# THE HEIL CO.

MILWAUKEE 6, WISCONSIN

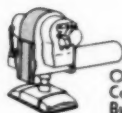
ALBANY, NEW YORK



Oil-Fired and  
Gas-Fired Winter  
Air Conditioners



Oil-Fired and  
Gas-Fired  
Highboys



Oil and Gas  
Conversion  
Burners



Oil-Fired  
Boilers



# Grandpa Never Threw a Thing Away



It's only human to want to hold on to things after they've outlived their usefulness. That's why today millions of tons of worn-out and obsolete equipment and machinery are lying forgotten in the country's plants and factories and on farms.

The steel industry needs these millions of tons of dormant scrap, needs

it in the worst way. With this vital dormant scrap the entire steel supply picture would brighten up, with more steel for everybody. But without it, the steel industry cannot hope to keep up production at present levels.

Call in a scrap dealer now, today. He will buy your dormant scrap and start it moving toward the steel mills.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

## More Scrap Today... More Steel Tomorrow



# make your own V.P.\* test!



*See why  
Ingersoll's  
Gas Lowboy  
rates best!*

*VALUE PROVED	
VALUE-PROVED FEATURES	WHAT THEY MEAN TO YOU
Factory assembled	Easy to install. Less time required.
Factory wired	Assures proper UL-approved wiring. Cuts on-the-job costs.
Factory tested and adjusted	Less installation time.
Wedgetube Heat Exchanger 12-gauge construction	Assures good heat transfer—rapid heat response. Straight upward flow of gases—no corrosion due to pocketing. Ruggedly built for longer life. Assures proper alignment of parts for efficient, economical operation.
Cast iron burners Raised drilled ports	Assures quiet operation—long life—maximum combustion performance.
Compact packaged unit	Low headroom needed—only 42" high.
Easily accessible blower	Rubber-mounted on base—accessible from either side of casing.
Large clean-out opening	Only 2 bolts—easy access to all flues.
1-pc. rigid steel base	No calking required—no air leakage.
Cushion-mounted blower	Smooth, quiet operation—no vibration noises.
Cool jacket	No heat discoloration—all heat delivered to bonnet.
Access panels	Easy inspection of controls, motor, blower, filter.
Protective coating on inside parts	Prevents rusting—gives longer life.
Glass fiber filters Factory installed	High dust removal efficiency.

**Want proof—real proof—of honest-to-goodness furnace value?** Then check-test the Ingersoll Lowboy against any other gas fired winter air conditioner. Make your own V.P.\* comparison—feature by feature. See what these great Ingersoll features mean—to your customers, and to you. Every one is *Value-Proved*—to help you sell, to help you make money.

Compact, efficient, economical, the Ingersoll Gas Lowboy is designed for *Shirtsleeve Comfort* through and through, and is available in a wide range of sizes. Approved by A.G.A. and Underwriters' Laboratories, Inc. And with complete advertising and sales helps, fine distributor support, and factory engineering assistance to back you up.

Make your V.P. test now. Then mail that coupon for details.



**Ingersoll**  
HEATING  
EQUIPMENT



*for  
Shirtsleeve Comfort*

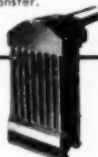
Gas, Oil, Coal • Gravity, Forced Air • Gas-Oil  
Combinations • Conversion Burners • Gas Boilers



**INGERSOLL PRODUCTS DIVISION**  
Borg-Warner Corporation  
Kalamazoo, Michigan

#### WEDGETUBE HEAT EXCHANGER

As the hot gases flow upward they follow a serpentine path around the indentations in the flue wall. This travel, plus the exclusive wedge design, results in a constant scrubbing action throughout the flue travel, which produces faster heat response and maximum heat transfer.



**INGERSOLL PRODUCTS DIV., Borg-Warner Corp.**  
Dept. AA, Kalamazoo, Michigan

We're interested! Rush literature and details for:

☐ Franchise Distributor ☐ Dealer

Send us literature, too.

☐ Architect ☐ Contractor

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



## A man in white is looking for you!

If you're crazy, friend, you're not our meat.

If you're *smart*, then our man in white is after you. He's got some hot new ideas about furnaces, and *you're* the man to sell 'em. *Everybody* benefits. Cast your eye on *this* research and selling program:

1. The hottest line of top-quality furnaces in the business! For instance, REGULAIRE®—the greatest furnace invention in 29 years!
2. Furnace values so good people can't resist 'em. More to come!
3. The sweetest local co-operative advertising program you've ever heard of!

If your sales need vitamins, our new program is just what the doctor ordered. Drop us a line—and we'll be out with our little black bag. Our medicine won't cost you money—it'll *make* you money!

Perfection Stove Company • 7351-C Platt Ave. • Cleveland 4, Ohio

  
**PERFEX FURNACES**  
**WITH Regulaire®**  
\* Patents Pending

# 4 simple steps

## more net profit per installation

You can trim installation cost and add the savings to net profit simply by installing the Windmaster Draft Control. Designed for better operating efficiency, the Windmaster also offers money-saving advantages every step of the way on every installation. Check these steps and see how many dollars *you* can add to your net profit per installation with the



## Windmaster *Draft Control*



**Simple installation** can be made in 4 minutes. The special design of installation also provides for a safe installation for both heating and cooling.



**Simple adjustment**—The exclusive design of the handle allows adjustment in any direction and range quickly and safely for both heating and cooling.



**Simple instructions** are easy to read and follow. An important factor in their design is a clear drawing and line reference.



**Simple removal** of the collected material takes only 1 minute. It can be placed in place at any time without the need for a person's presence.

**Windmaster**  
*Corporation*

897 INGLESIDE • COLUMBUS 8, OHIO

\*patent pending

**Windmaster**  
*Draft Control*



# WHAT'S NEXT?

**The No. 133-3/4 U.S. Diffuser Base Register You've Waited for is Now Ready for Shipment**



No. 133-3/4  
DIFFUSER BASE REGISTER

## No. 410 DIFFUSER FLOOR REGISTERS

are NOW COMING OFF our Production Lines.

That NEW FLOOR DIFFUSER with Graduated Diffusion — Perfect Operation — With Balancing Set-Lock.  
Made in SEVEN SIZES

4 x 10	2 1/4 x 14	6 x 10
4 x 12		6 x 12
4 x 14		6 x 14

IT Diffuses the Air Stream over a 120° Spread—Blankets the Windows and Outside Walls with Warm Air.

IT Diverts the Air Stream sufficiently out from the Windows to Prevent Air Motion and Sailing of Curtains, Drapes and Discoloration of Decorated Wall Surfaces.

IT will Sell the Hard-to-Sell Intelligent Builder and Owner who object to Floor Diffuser Registers.

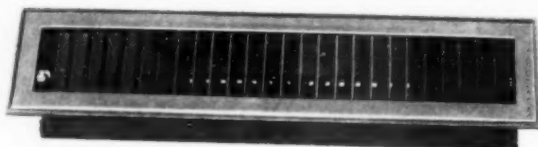
IT is So Easy to Install. No cutting into Walls. Saves cutting of Rugs and Wall-to-Wall Carpets.

### Made in THREE SIZES

10 x 6 grille sizes	3 1/4 x 10 Boot Size
12 x 6 grille sizes	3 1/4 x 12 Boot Size
14 x 6 grille sizes	3 1/4 x 14 Boot Size

METALAC (Standard Finish)  
with Heads Complete or Less  
Heads.

Will be available with Base  
Extension for 4 Inch Round  
Pipe.



No. 410 DIFFUSER FLOOR REGISTER

Nos. 133-3/4 and 410 are designed for  
Perimeter Loop — Perimeter Radial Loop  
— Perimeter Lateral-Perimeter Crawl —  
Space, Duct and Perimeter Crawl-Space

Systems. A NEW FOUR Page Standard  
catalog Folder on These Nos. 133-3/4 and  
410 NOW READY For Mailing. Ask Your  
Jobber to Stock these New Lines Immediately.

Write for Register Catalog No. 51 with Latest Insert and Also No. 52F-Fitting Catalog.

**PROMPT SHIPMENT of ALL ORDERS definitely Assured.**

## UNITED STATES REGISTER COMPANY

BATTLE CREEK, MICHIGAN

MINNEAPOLIS

KANSAS CITY

ALBANY

SOLD BY LEADING JOBBERS FROM COAST TO COAST

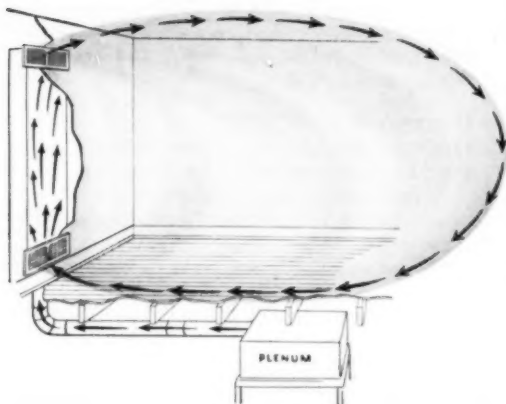
NO FULL-PAGE ADVERTISEMENT COULD POSSIBLY  
GIVE YOU ALL THE AMAZING DETAILS OF THESE

## NEW, SENSATIONAL *Comfort* AIR-CIRCULATING SYSTEMS *for low-cost packaged heating!*

THE MOST OUTSTANDING DEVELOPMENT YET  
IN THE NATIONALLY-KNOWN LINE OF

### ILLINOIS IRON & BOLT CO. HEATING EQUIPMENT

INCLUDING . . .  
COMFORT GAS, OIL, AND COAL-FIRED FURNACES  
COMFORT GAS AND OIL CONVERSION BURNERS  
FREEMAN LONG-LIFE STOKERS



#### Send Coupon Today for Full Details:

● This new Comfort Air-Circulating System — one of Illinois Iron & Bolt Company's most outstanding developments — is a *pre-engineered* warm air heating installation. The entire unit (assembled furnace, air circulators, pipe, fittings, connectors, etc.) comes compactly packaged to save you handling time and work . . . simplify your on-job assembly. Design principle of this modern system embodies the flow of warm air — forced by a large power blower through 3-1/2" ducts at a maximum velocity up to 1100 feet per minute — to air circulators in each room. Circulators mix this warm air with room air and discharge it at a low velocity of 300 feet per minute or less.

The illustration at the left shows this principle of recirculation as it actually operates. Three types of air circulators meet all your requirements for new or old construction . . . function efficiently with *all types of Comfort forced-air furnaces* (gas, oil, or coal-fired) . . . are designed for all basement or utility room installations on any job *regardless of size*. This new method of heating provides constant, uniform temperatures from floor to ceiling . . . lowers cost and is easier to install because of the savings in materials, space, etc.

Distributorships available on these Comfort Air Circulators; also on Coal, Oil and Gas Furnaces . . . Oil and Gas Conversion Burners . . . and Freeman Stokers. Mail coupon today!

ILLINOIS IRON & BOLT COMPANY  
914 South Michigan Avenue  
Chicago 5, Illinois

Dept. C

Send us the following material as checked below:

- ☐ Comfort Air-Circulating Systems  
☐ Comfort Oil, Gas, and Coal Furnaces  
☐ Comfort Oil and Gas Conversion Burners  
☐ Freeman Stokers

NAME.....

ADDRESS.....

CITY.....ZONE.....STATE.....

### ILLINOIS IRON & BOLT COMPANY

CARPENTERSVILLE, ILLINOIS (ESTABLISHED 1864)

CHICAGO SALES OFFICE: 914 S. MICHIGAN AVE., TEL. WE65149 9-3353





says S. Kane & Son,  
Sheet Metal Contractors,  
Philadelphia, Pa.

"RAMSET is invaluable in our  
work of installing air condi-  
tioning and ventilating  
systems and other sheet  
metal work."

You can cut costs up to 75% and time up to 90%, for fastening into steel and concrete with simple, strong, easy-to-use RAMSET® TOOLS and Tru-Set Fasteners. More contractors rely on RAMSET than on any competing method. They know from long experience that RAMSET gives them more effective fastenings, better service, saves more time and money, on every job.

New Tru Set Fasteners, at lower cost, bring added speed and economy. The elasticized Red-Tip Pilot guides the fastener straight and true to the work, on the spot where it's wanted.

Versatile RAMSET SYSTEM can be profitably applied to hundreds of fastening jobs. See your local dealer or write us today for details on how its amazing performance saves time and reduces costs.

**Ramset Fasteners, Inc.**

*Pioneer in powder-actuated fastening*

12117 BEREA ROAD • CLEVELAND 11, OHIO

Product Patent No. 2470117. Other Patents pending



## Rectangular — Round Angular Offset Fitting —

(From page 53)

WX to the center line of the  $1\frac{1}{4}$  in. diameter on the end view.

- (5) From the diameter line measure  $\frac{5}{8}$  in. and draw the line P'L'. This line will be tangent to the half circle. Mark the distances from this line to the quarter circle N, P, S, as shown. Note: The  $\frac{5}{8}$  in. dimension is the distance from line YZ to the center line of the  $1\frac{1}{4}$  in. diameter on the end view.

### To Layout the Short Pattern

- (1) Draw a line 3 in. and mark the points YZ.
- (2) Working from the simplified method drawing, measure line A and using this as radius and Y on the layout as center draw a long arc. measure line D on the simplified method drawing and with Z on the layout as center cut the arc at 7'.
- (3) Draw a right angle, transfer lines B and E from the drawing to the vertical leg and distance N to the horizontal leg. Draw the developed lines BN and EN. From Y and Z on the layout as centers and developed lines BN and EN as radii draw arcs. Measure chord I'2' on the half circle and from 7' on the layout as center cut the arcs drawn from Y and Z. Mark the points 6' and 8'.
- (4) Transfer lines C, H, F and G from the simplified method drawing to the vertical leg of the right angle and distances P and S to the horizontal leg. Transfer developed lengths CP, HS, FP, GS, to the layout in their proper sequence and mark the points 9', 10', 5', 4' as shown.
- (5) Measure line G on the drawing and with 4' on the layout as center draw an arc. Set a compass at  $\frac{5}{8}$  in. and with Z on the layout as center cut the arc drawn from 4'.
- (6) Measure line H on the drawing and with 10' on the layout as center draw an arc. With radius  $\frac{5}{8}$  in. and Y on the layout as center, cut the arc drawn from 10'.
- (7) Through the developed points draw the pattern outline and the work lines.

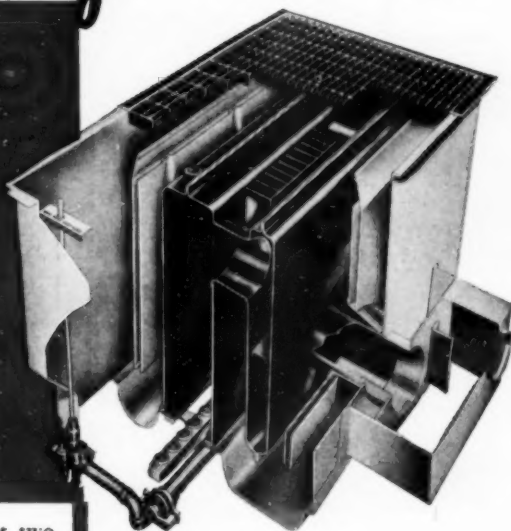
### To Layout the Long Pattern

- (1) Draw a line 3 in. and mark the points WX.
- (2) Draw a right angle, transfer lines A and D from the drawing to the vertical leg and distance M to the horizontal leg. The developed lines AM and DM are true length lines.
- (3) Transfer lines B and E from the drawing to the vertical leg of the right angle and distance L to the horizontal leg. Developed lines BL and EL will be true length lines.
- (4) Lines C and F are transferred from the simplified drawing to the vertical leg of the right angle and distance K to the horizontal leg. The developed lines CK and FK are true length lines.
- (5) Transfer lines H and G from the drawing to the vertical leg of the right angle and distance J to the horizontal leg. The developed lines HJ and GJ will

(Please turn to page 130)

# FOR PROFITS *Get in on the Ground Floor*

## WASHINGTON GAS FLOOR FURNACES



Producing as much as 50% more heat, yet two whole inches shallower than comparable units, the WASHINGTON Gas Floor Furnace has much to offer the retailer and contractor. It is installed easily in the floor of any building with or without a basement. Multiple installations can be used when heating requirements are higher. Automatic electric controls are available for all models.

WASHINGTON Gas Floor Furnaces are competitively priced, too. You can earn extra profits and extra customer good will by installing these dependable units. Be ready to offer the best . . . for new installations or quick, low-cost conversion...with WASHINGTON Gas Floor Furnaces, a product of Gray & Dudley Company, a respected name in heating appliances for almost 90 years. Use the coupon for complete information.

**GRAY AND DUDLEY COMPANY**  
Established 1862  
Nashville, Tennessee

### Check These Features

- ★ Easy to Install
- ★ More Heat from Less Space
- ★ Extremely Trouble-Free
- ★ 35,000 to 70,000 BTU ratings
- ★ Three Sizes
- ★ AGA Approved for all gases

Please send me specifications and details on  
WASHINGTON Gas Floor Furnaces. I am a

☐ Dealer

☐ Contractor

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

*The most complete line!*



# How Heating Contractors Profit 7 Important Ways



## WITH **VAN-PACKER** PACKAGED MASONRY **CHIMNEY** *Sales Features*

- 1 MORE PROFIT**—Install it all from furnace to flue and add to your profits. Why give the chimney sale to someone else when you can do it yourself?
- 2 FREEDOM IN PLANNING**—The heating plant can be centrally located so heat runs are shorter and fuel savings are greater.
- 3 EASILY INSTALLED**—The Van-Packer All-Fuel Masonry Chimney is easily installed in 3 hours or less... in 97 minutes with a helper.
- 4 PERFORMANCE**—Maximum heater output for Van-Packer 7" I.D. Flue, 20" Floor Suspended Model, is 250,000 BTU per hour for coal, 300,000 for oil, 500,000 for gas. The 10" Ceiling Suspended Model is 150,000 BTU per hour for coal, 200,000 for oil, 450,000 for gas.
- 5 SERVES ALL FUELS**—Van-Packer serves heating plants burning any type fuel in homes of ten rooms or less.
- 6 FIRE SAFETY**—Has insulating vermiculite concrete wall and fire-clay tile liner, equal in insulating value to 24" of brick or 70" of ordinary concrete.
- 7 IMMEDIATE DELIVERY**—The Van-Packer is nationally distributed through reliable heating and building material jobbers. Jobber openings are still available. Write for literature and details.



Van-Packer is tested and approved fire-safe for use with all fuels by Underwriters' Laboratories, F.M.A. accepted.

**Van-Packer CORPORATION**  
Dept. 1105 209 S. LaSalle St.  
Chicago 4, Illinois

Also Manufactured and Distributed in Canada by C. A. McRobert and Son, Ltd., St. Laurent, Quebec.

## Need a Loan? Here's How —

(From page 60)

Many types of business require relatively small proprietary investments in relation to sales. They have smaller fixed asset requirements compared to sales volume than other businesses and if the ratio is too far out of line, some banks may not grant credit in amounts sufficient to cover operative needs, or they may not grant credit at all. To borrow adequate working capital from a bank, the owner must have adequate risk capital invested in his business. In this field, when the ratio of net worth to current and fixed liabilities is 2 to 1, the banker is usually satisfied the borrower is an adequate risk.

## Wide variance in interest rates

Interest rates and types of loans vary with the banks. A man may save money shopping around. A "straight" loan, payable in a certain time at so much interest per year, is probably the least expensive. Banks, however, like to sell loans on installments because they are more profitable. The rate varies with the bank, and may run to 15 per cent or more. This may seem high, but it reaches that amount on an installment basis, because although the advertised rate may be 6 per cent, the borrower must return the money in monthly installments and does not have the use of the total loan for the full year.

Every businessman, now and then, gets tight for money. This is no business sin. The banker realizes this. Moreover, he is selling credit and is anxious to do business if the businessman appears to be a safe risk. The banker knows that a businessman may get short of working capital and still be competent. All the banker wants from a firm is a good reason for its shortage of "seed money", that the need for funds is not due to bad business management and the owner should appraise the situation in advance, making sure that he has handled his operations satisfactorily, that the net worth is not "watered", that he can give a plausible explanation for his need for financial assistance.

## Rectangular — Round Angular Offset Fitting —

(From page 128)

- be true length lines.
- (6) Transfer the developed lines from the right angles to the pattern. The spacing for the round section is taken from the half circle on the drawing.
  - (7) Measure line *G* on the drawing and with *4'* on the layout as center draw a long arc. Set a compass at  $13\frac{1}{4}$  in. and with *X* on the layout as center cut the arc drawn from point *4'*.
  - (8) Measure line *H* on the drawing and with point *10'* on the layout as center draw a long arc. From *W* on the layout and radius  $13\frac{1}{4}$  in. cut the arc drawn from point *10'*.
  - (9) Through the developed points draw the pattern outline. The collar stretch-out is calculated by multiplying the given diameter by the constant 3.14.

Add necessary allowances for seams, joints and flanges, and mark patterns for fabrication.

# Complete

## YOUR ROOFING JOBS WITH

### FOLLANSBEE TERNE METAL

Follansbee Seamless Terne Metal is the ideal weathersealing material for built-up, composition, wood, asphalt or asbestos shingle, slate or tile roofs. Tough, durable and malleable, Terne Metal should be used for copings, eaves troughs, flashings, gravel stops, gutters and valleys.

Terne Metal is available now in 50 foot seamless rolls, in widths from 4" to 28". The seamless roll permits fabrication of valleys or gutters in one continuous strip. Pre-cut 5" by 7" flashings, also available, save time and reduce waste.

Follansbee Seamless Terne Metal is the profitable answer to your roofing and weathersealing jobs. Write us for additional information.

A method of flashing a brick wall, parapet or chimney with Terne when composition roofing is laid on a flat deck.



A method of flashing a skylight with Terne.



A method of flashing a ventilator or trapdoor.



Remember, with Follansbee Terne Metal, no provision need be made for expansion and contraction.

## FOLLANSBEE STEEL CORPORATION

GENERAL OFFICES, PITTSBURGH 30, PA.

POLISHED BLUE SHEETS AND STRIP SEAMLESS TERNE ROLL ROOFING  
COLD ROLLED STRIP

Sales Offices—New York, Philadelphia, Rochester, Cleveland, Detroit, Milwaukee. Sales Agents—Chicago, Indianapolis, St. Louis, Kansas City, Nashville, Houston, Los Angeles, San Francisco, Seattle, Toronto and Montreal, Canada. Plants—Follansbee, West Virginia.

FOLLANSBEE METAL WAREHOUSES

Pittsburgh, Pa. Rochester, N.Y. Fairfield, Conn.



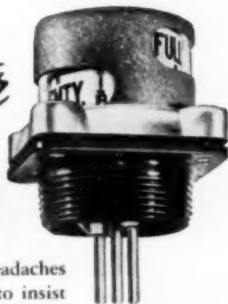
## Cure these headaches

with

# Rochester

"dual-dial"

## GAUGES!



One sure way to avoid the headaches caused by faulty gauges is to insist on rugged Rochester "DUAL-DIALS." Their solid, leakproof construction eliminates unnecessary service calls, gives long-life dependability and assures complete customer satisfaction.

Why not profit by these outstanding "Dual-Dial" features

- Solid head
- Pressure tight
- Easy to install
- Easy to read
- Permanent magnetic indication
- Underwriters' listed

Over 2½ million "Dual-Dials" have already proved their dependability in service. Stocked by leading wholesalers for all standard basement oil burner storage tanks with 1½" and 2" flanges. **ORDER TODAY!** Rochester Manufacturing Company, Inc., 66 Rockwood Street, Rochester, N. Y.

# Rochester

MANUFACTURING COMPANY, INC.

DIAL THERMOMETERS GAUGES AMMETERS



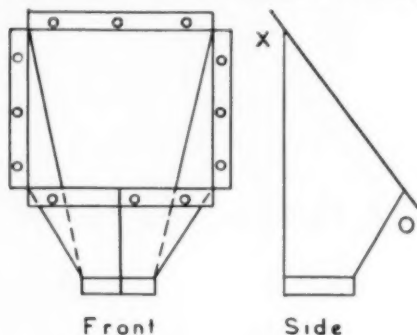
## Fundamentals of Sheet Metal Practice —

(From page 57)

or grooved together and the laps or flanges then easily completed to the desired angle. This may be done on the stake or bar. It may also be done in the brake by clamping each flange in with the crease even on the outside edge and pushing the work down, while dressing it with a mallet.

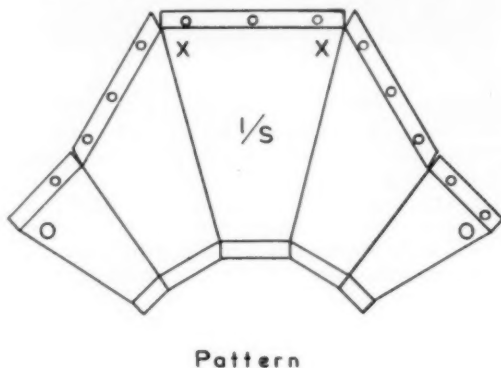
This method of pre-bending will be found very useful, whether the work is square or rectangular to round; or square at each end.

In Fig. 131 is sketched a rectangular to rectangular

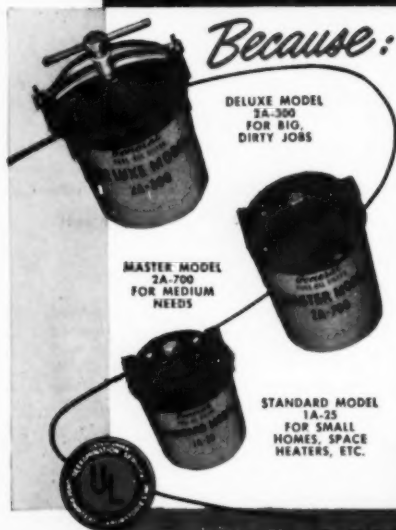


intake having a  $\frac{3}{4}$  in. flange to which a wire mesh screen is fastened. These flanges were all pre-bent in a fitting of  $\frac{1}{16}$  in. aluminum.

The sketches show the front and side views and the pattern. Lines were drawn to the edges as noted and were placed even on the outer edge of the bending leaf and malleted down 90 deg. The flange x-x was then bent to 45 deg and the four corners bent up. After the seam was riveted the flange o-o was dressed over to 135 deg on a stake. This method may be used wherever it is necessary to secure a neat, sharp bend.



## INSTALL A GENERAL FUEL OIL FILTER ON EVERY HEATING SYSTEM YOU SERVICE



**Because: GENERALS assure clean, safe fuel oils for your customers—stop costly "call-backs" for you**

- ▶ Positive absorption with GF's double filter element. Finest felt cartridge removes the finest dirt particles. Inner wire mesh strainer prevents collapse, backs up cartridge.
- ▶ Two-minute felt cartridge replacements mean easy service revenue for you for years to come.
- ▶ Your customers will WANT GENERAL FILTERS and the clog-free protection they offer the year 'round by trapping impurities before they reach burner nozzles.
- ▶ There's a GENERAL FILTER model to fit every need . . . small or large . . . home, business, trailer, etc. All that's needed is a wrench and a few minutes' work.

**Remember:** . . . a 1/8 inch layer of soot raises heating costs up to 25%! **CLEAN RIGHT SOOT REMOVER** cleans any system quickly, safely — leaves no residue.



GENERAL FILTERS  
INCORPORATED

**GENERAL FUEL OIL FILTERS**

12890 Westwood Ave.  
Detroit 23, Michigan

CANADIAN FACTORY BRANCH: CANADIAN GENERAL FILTERS, LTD., 2679 DANFORTH AVE., TORONTO 13, ONTARIO



## REZNOR'S New Versatile "PAC"

ALL-PURPOSE UNIT/CENTRAL  
GAS, FORCED WARM AIR HEATER

- SAVES ON INVENTORY
- SAVES ON STOCK SPACE
- INSTALLS EASILY
- OPERATES EFFICIENTLY

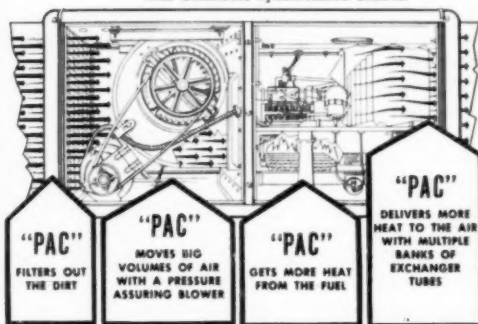


• Now you can draw on your stock of one type unit to supply residential, commercial and institutional heat. Reznor PAC is AGA approved as a Unit Heater for use with or without ducts; and as a Central Heating Appliance for use with or without ducts. PAC can be either suspended or base mounted. Flanges on front and back are fitted with either standard Reznor louvered frames or connected to duct systems. PAC is small and all controls are enclosed within the attractive casing.

**REZNOR**

"PAC" Provides Packaged Automatic Comfort with ...

- Engineered coordination of heat production and air movement for maximum efficiency. PAC provides automatic temperature maintenance with balanced, synchronized control.



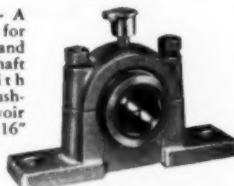
• DATA — 100,000 BTU capacity; 22" x 22 1/2" x 47" long; centrifugal blower; standard size filter; individually adjustable louvers; Reznor "airform" heat exchanger; interchangeable (top or side) flue connection; two removable doors on one side for easy access to all parts; tube oiling of back blower bearing; tapped, mounting sockets on top and bottom; Reznor burners for use with natural, manufactured, mixed or LP gases.

**REZNOR MANUFACTURING COMPANY**  
40 Union St. Mercer, Pennsylvania

*Manufacturers of the World's  
Largest-Selling Gas Unit Heater*

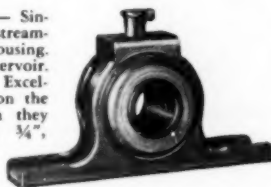
## THERE'S A RANDALL PILLOW BLOCK FOR EVERY TYPE APPLICATION

**Normal Duty Pillow Block** — A general service pillow block for normal duty on small shafts and for heavier duty on larger shaft sizes. Double-lubricated with graphited, phosphor bronze bushing in wool packed oil reservoir housing. For shafts 1/2" to 3 15/16" inclusive.



**Flange or Side Mount Pillow Block** — A top quality pillow block built for the most exacting service. Double-lubricated with graphited phosphor bronze bushing in wool packed oil reservoir housing. This pillow block is widely used in unit heaters, cabinet type air conditioning units. Side mounting only. For shafts 1/2" to 1 15/16" inclusive.

**Sintered Bushing Series** — Sintered bronze bushings in streamline one-piece steel housing. Wool packed oil reservoir. Mounts in any position. Excellent for general service on the smaller shafts for which they are available, 1/2", 5/8", 3/4", 15/16" and 1".



Write for catalog No. 109.—For additional information on these as well as other one piece or two piece pillow blocks available for light, normal or heavy duty. There's a Randall Pillow Block for every type application.

BRONZE BAR STOCK  
BRONZE BUSHINGS  
PILLOW BLOCKS  
SHEET LUBRICATOR

**Randall**

GRAPHITED BEARINGS  
THRUST WASHERS  
BABBITT METALS  
SAFETY COLLARS

**RANDALL GRAPHITE BEARINGS, INC.**

1000 S. Greenlawn Avenue • Lima, Ohio

## Norman SOUTHERNER horizontal gas furnace



### One furnace for ALL



Attic Installation



Basement



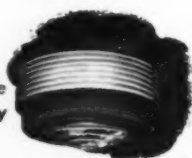
Crawlspace



Crawlspace (Without Pipes)

Adaptable to any type of installation or floor plan. Adds more useable space. Hide it in any small out-of-the-way place in attic, under floor or stairs, closet, utility room. Ideal for basement installations. (It's the answer to partially flooded basements.) Can be suspended from ceiling or floor joists, put on wall shelf, or set on blocks. Flexible—can be located where it cuts piping costs without sacrificing heating efficiency. Especially suitable for ranch-type homes. Four sizes 40,000 to 100,000 BTU.

Write for literature and complete details.



Made by the makers of the famous Norman Three-Sixty Unit Type Gas Heater

Norman products company

1150 Chesapeake Ave., Columbus 12, Ohio

\*Trade Mark Registered — Copyright 1952 by Norman Products Co.



### Solving the Lost Tool Problem —

(From page 62)

On the huge new copper batten roof job installed on the House of Representative side of the U. S. Capitol, the Fingles Co. did not lose a single drill or extension cord. Twice daily, William Fingles in the position of checker, took an inventory that required only a half hour but resulted in this money saving record.

"My grandfather believed in machinery, my dad believes in good equipment and I believe that keeping up with modern tools as a key factor for success" says William Fingles, the third generation of the family in the organization as he pointed to a newly purchased portable gas operated generator set in a corner of their plant awaiting shipment to a job.

This handy accessory can readily be lifted and carried about by two men on a construction job wherever power is not available. It has five outlets and as quickly as a man can plug the tool in, he has his drill, hammer or electric tool working.

It was the Fingles Co. who made the latest addition to sheet metal tools with their batten seam clenching machine that was so successfully used on the copper batten roof recently installed on the U. S. Capitol.

Both in the shop and on the job, this firm is equipped for efficiency with a greater variety of machinery than is found in the average shop. The company has one tool that is seldom seen in any shop — an electric trip hammer, that works with amazing rapidity and is a terrific labor saver in bumping out a circular gutter, shaping up angles, straightening out metal or beating out a pan. In their search for the new, The Fingles Co. has not passed up the factor of merit in the old, and this trip hammer is one of the oldest pieces of equipment in their plant in years of service but still in active use.

Whether a tool is large or small, as long as it speeds production, Fingles finds a use for it in the plant. They displayed a new 10 ft Cincinnati shear that cuts 3/16" plate as easily as it splits a sheet of 23 gauge. They demonstrated an electric two ton hoist for lifting heavy fittings off the floor to give a mechanic ready access to his work or to put heavy pieces on a delivery truck for shipping to the job site.

### Traffic accidents and deaths reduced in 1951

Pedestrian experience in 1951 has been termed "an island of encouragement in last year's ocean of accidents" in a recent publication of The Travelers Insurance Companies, Hartford, Conn. Pedestrian deaths were fewer, while injuries were reduced by nearly 9,000.

Saturday was the most dangerous day of the week to drive. More persons lost their lives during the hour from six to seven p.m. than at any other time. Injuries hit their peak from four to five p.m.

Ninety per cent of drivers involved in 1951 accidents were males. Ninety-seven per cent of these same drivers had at least one year of driving experience.

Don't become a statistic!

# Comfort Air Washer

FOR EVERY COOLING NEED

*a Better Product  
doing a  
Better Cooling  
Job*



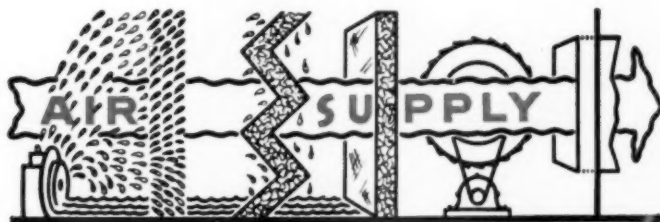
4 practical sizes built to deliver full-rated capacity of triple-washed, cool, filtered, fresh air per minute, all season long.

Model	CFM	Motor	
35 AW	3500	1/2 h.p.	Spray-wheel motors
50 AW	5000	1 h.p.	for all models, 1/3
75 AW	7500	2 h.p.	h.p.—single or
100 AW	10,000	3 h.p.	three-phase

## These Better Basic Features Distinguish the AIR WASHER

- All incoming air washed of dust and dirt, filter pads remain unclogged . . . cooling efficiency stays high and uniform.
- Comfort Spray-Wheel provides continuous sheet of mist and heavy water over pad surfaces. No pumps, no spray nozzles . . . trouble-free.
- MORE PAD AREA (stair-stepped in design) permits lower velocities, lower resistance and higher efficiency.
- FIBERGLAS (Reg.) PADS throughout — vegetable and fungi odors eliminated.
- Non-splash louvers eliminate back-splashing of water.
- Rust-proof construction, durable, attractive hammer-enamel finish outside.
- Self-aligning graphite bronze pillow blocks, wool felt, packed deep to provide long, trouble-free Air Washer Service.

Comfort Air Washer . . . THE COOLING UNIT THAT MEANS PROFIT FOR YOU



Diagrammatically  
here's the way the

**Comfort  
Air  
Washer**  
works—

For further  
information  
write to . . .

**COMFORT  
PRODUCTS  
CORP.**

2220 LAMESA • DALLAS, TEXAS

Comfort-Engineered, non-clogging spray-wheel atomizes water cleans, and for proper washing of air

Continuous wall of atomized water filters, cleans, and for proper washing of air

Stair-step FIBERGLAS (Reg.) filter unit supports no organic growth

Baffle filter for humidity control

Properly sized HEAVY-DUTY BLOWER (cog-belt driven). Full-size motor maintains full-rated air supply

Adequate static pressure available at blower outlet for duct systems

IT'S EASY TO SELL C-O-M-F-O-R-T

BARBER COLMAN

**venturi-flo**

**CEILING OUTLETS**

A UNI-FLO PRODUCT

**ENGINEERED AIR DISTRIBUTION**

**GUARANTEED PERFORMANCE**

**BARBER-COLMAN COMPANY**

1224 ROCK STREET, ROCKFORD, ILLINOIS

# Restaurant Modernization with Stainless Steel —

(From page 38)

that in Fig. 7 from the front, and like that in Fig. 8 on the side toward the waitress.

By viewing the various piecing-together of strips and panel fastenings shown in the several small drawings (Fig. 3, 4, 5, 6, 7, and 8), it may be seen that the stainless steel build-ups can be made of smooth, unmarred exteriors, fairly rigid in their places, and completely vermin-proof. There is much intricate work to

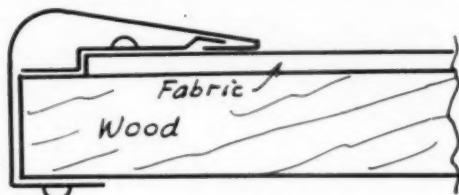


Fig. 7

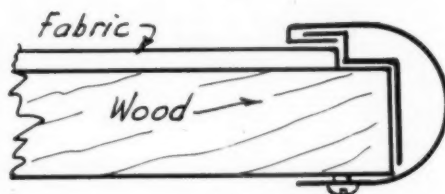


Fig. 8

be done in matching corners of the various formations, which is why sheet metal workers should do the work, rather than carpenters, who are occasionally employed on such jobs.

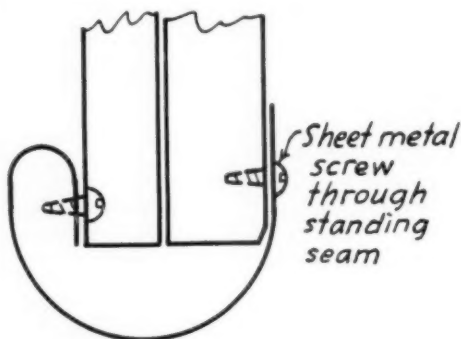


Fig. 9

In the example illustrated, it is seen that the ceiling *F*, is installed in such a way that the fan, *N*, can draw air from the front part of the kitchen above the ledge, *D*, where it is necessary to collect vapors and odors from the meals handled there. In Fig. 9 is shown a shallow gutter on the metal paneling, *M*, above *T*, catching drops of condensation from vapors, and preventing them from dripping upon the ledge, *D*, and food which has been placed there.



Glenbrook Mine, Stonega  
Coke and Coal Co., Harlan  
County, Kentucky.

## FOR PLACES YOU DON'T EVER WANT TO PAINT

Over 170 squares of Alcoa Aluminum cover this tippie, conveyors and mine buildings. And they won't ever need painting despite constant exposure to weather and corrosive coal dust. These large, light, easy-to-handle aluminum sheets saved money by speeding construction. And they'll save money year after year by eliminating upkeep costs.

Alcoa Industrial Building Sheet can be applied by all standard methods of fastening. Figure your next building in aluminum. Get better appearance with lower cost.

For details on Alcoa Industrial Building Sheet, sizes, accessories and engineering data, call your local Alcoa sales office or write for Book AD-167.

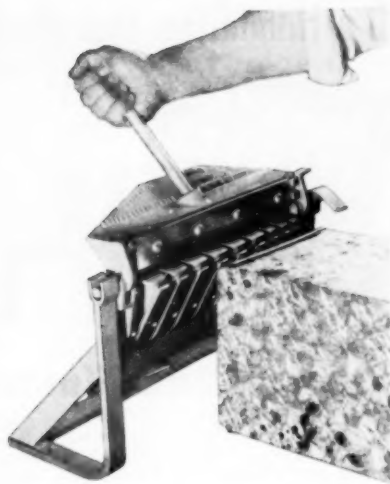
### ALUMINUM COMPANY OF AMERICA

807-E Gulf Building • Pittsburgh 19, Pennsylvania



Only 56 pounds per square! Less time and money spent in handling and erection. Less dead load on building.

**ALCOA**  
INDUSTRIAL  
BUILDING SHEET



## THE *Complete* DRIVE CLEATING MACHINE

Smith's Cleat Benders save wasted minutes that add up to hours . . . days . . . and weeks of needless effort . . .

To find out where you may be wasting valuable minutes—try this experiment;—**TIME YOURSELF** when making cleat edges on various widths of ducts up to 18" and gauges up to 20, with your present methods . . . Then **TIME YOURSELF** again by making the same folds on a flat piece of metal with a bar-folder. . . . The comparison will give you some idea of what to expect with a SMITH'S CLEAT BENDER.

A Smith's Cleat Bender is essentially like a bar-folder in that a bend can be made and pinched down. . . . Unlike a bar-folder or any other bender, it is so constructed to allow entering square ducts of various widths to make the bend. . . . It is so constructed that it can be disengaged from the work, leaving the work in a horizontal position throughout the bending cycle. . . . This is important when cleat-edging long lengths.

- ✓ Bends uniform cleat edges in less than 5 seconds! Other methods take as much as a minute or more.
- ✓ Makes perfect drive cleats in less than 8 seconds! Free of ripples and ready to use without the aid of a screw driver.

No money tied up in idle equipment . . . And no time wasting adjustments to make, fits any size duct up to width of bender and any thickness up to 20 Gauge.

No. 12 SMITH'S CLEAT BENDER (12" wide) . . . \$42.00\*

No. 18 SMITH'S CLEAT BENDER (18" wide) . . . \$66.00\*

\*(Prices subject to change without notice)

F.O.B. WAUKEGAN, ILLINOIS

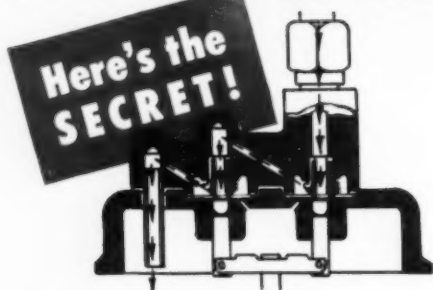
See Your Smith's Cleat Bender Distributor Now!

**R. E. SMITH**

1806 Belvidere St. Waukegan, Ill.



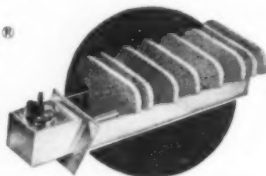
## Sell a Humidifier that Works!



## Exclusive Dual Valves!

See? These two stainless steel dual valves are constantly submerged. They *can never dry* . . . can't rust, corrode, clog or leak. These valves, controlling the flow of water into the evaporating pan, constitute the heart of the humidifier. **ONLY Combustioneer** has them!

## Combustioneer® Automatic Humidifier



For big, quick profits, sell the *dependable Combustioneer Humidifier* . . . the one that works day and night, year after year . . . works **ALWAYS!** That's what "automatic" means to your prospects. That's what they *want!* Give them the luxury, comfort, health protection, of constant ideal humidity in their homes. You'll make more sales, make more money!

**Other Exclusive Features.** "Noverflow" prevents leaking or dripping inside the furnace. Non-corrosive pan. *Selector Dial* controls degree of humidity. Big "Thirsty-Thick" ceramic plates give enormous evaporation area.

**Two De Luxe Models.** Fit almost any coal, gas or oil furnace. Model CH-300, for 13" to 20" plenum (width or length) in furnace. Model CH-200, for 22" to 25" plenum. They give you **MORE** prospects!

## We help you SELL!

**FREE!** . . . counter cards, window streamers, mailing pieces. A 50-50 co-op advertising plan. Write for the profit-paying **Combustioneer Humidifier Dealer Proposition.**

**Combustioneer** GAS BURNERS • HIGH AND LOW PRESSURE OIL BURNERS • COAL-GAS-OIL FURNACES • STOKERS • HUMIDIFIERS

"Better Heating Since 1928"

### Combustioneer DIVISION

The Steel Products Engineering Co.  
1226 W. Columbia St., Springfield, Ohio

Please send me, without obligation, full information about the new **Combustioneer Humidifier Dealer Proposition.**

Name \_\_\_\_\_

Firm Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Coupon on page 100

blower unit with manual pulley adjustment for CAC applications.

Model 8070 (not illustrated) uses no belts or pulleys but has a specially developed fingertip control system for accurate CAC adjustment.

Both models use throwaway filters arranged for convenient accessibility. **AA 185**

### Downflow Gas Fired Furnace

GENERAL ELECTRIC, Bloomfield, N. J., is marketing a new downflow gas fired furnace.

The new unit has been designed for installation in the living area of basementless houses and for use with the company's air wall heating system. It may also be used with conventional perimeter heating systems either in slab or crawl space.

The company's home heating and cooling department reports the new downflow unit was developed in recognition of the trend to basementless houses.

The new furnace is one of the quietest ever developed. It has rubber mounted blowers which give it the lowest possible level of blower or fan noise, and it uses ribbon burners which ignite quietly and go out quietly.

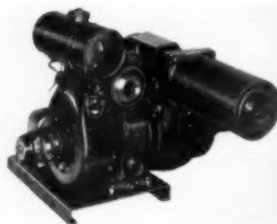
Three sizes are offered for use with natural, manufactured or LP gas. Completely packaged and factory assembled, wired and tested. **AA 186**

### Portable Pressure Burner

WAYNE HOME EQUIPMENT CO. INC., Fort Wayne, Ind., is marketing a portable high pressure oil burner.

A 1.5 hp gasoline driven engine provides the power for the oil burner which has an adjustable capacity of 0.8 to 2.5 gph.

The engine drives fuel pump, fan, and a magneto generator which supplies electricity needed for ignition. **AA 187**



Portable burner



Stud driver

### Cartridge Powered Stud Driver

REMINGTON ARMS CO. INC., Bridgeport, Conn., recently announced a cartridge powered stud driver. A tiny quantity of propellant powder, slightly over 3 grains in weight, generates enough controlled energy to drive a steel stud into a structural steel plate  $\frac{3}{4}$  in. thick, or so

(Continued on page 140)



*Darling it's so exciting . . .*

*I just can't wait*

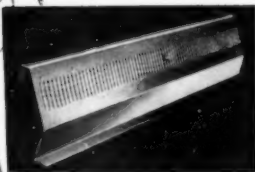
*to see those sensational, new*

Write Now for  
Your Free Copy  
of Standard's  
Amazing New  
Pocket Catalog

## STANDFORATED Perimeter Baseboard Registers

WITH SLIDING DAMPER CONTROL

- Used in homes, schools, churches and commercial installations.
- Comes in four foot sections.
- Simplifies balancing of heating systems.
- Fabricated of 20 gauge steel.
- Finished with Prime Coat only—special finishes on request.



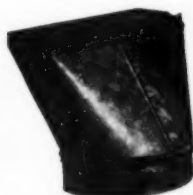
**Standard Stamping & Perforating Co.**

3137 WEST 49th PLACE, CHICAGO 32, ILLINOIS

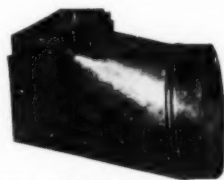
*Attach this to your business letterhead and mail for new catalog.*



No. 112 BOOT



No. 110 BOOT



No. 113 BOOT



No. 111 BOOT



← No. 164 End of  
Line Center Takeoff.  
For use with 2 No.  
163.



No. 160 Takeoff Round  
Pipe to carry branch  
in or below joist. →

## GRAY "Snap-Rite"

FURNACE PIPE AND FITTINGS

AIR CONDITIONING PIPE

AND FITTINGS

A complete line of Gravity and Forced Air Pipe and Fittings with our positive "SNAP-RITE" Lock for quick assembly and erection. Wall Stack and Fittings in 3 1/4" standard depths. Trunk Pipe and Fittings in 8" standard depths.

Write for Catalog

**GRAY METAL PRODUCTS, INC.**

30 Carlton Street

Rochester 7, New York

**Coupon on page 100**

singly imbed it into aged concrete that a pull in excess of 4,000 lbs is necessary to remove it.

Weighing little more than 5 lb, the cartridge powered tool can be easily operated by one man and its high degree of portability and efficiency is of particular interest to the heating and sheet metal field.

The tool can be comfortably operated at a sustained speed of 5 or more stud settings a minute in concrete, steel, wood and other structural materials. Speed in its use can be stepped up to from 5 to 50 times as fast as ordinary stud setting methods.

Secret of the new tool's efficiency lies in the unique system of controlling and directing the great energy generated by the small charge of specially developed powder. The energy supplier is a 32 caliber long rim fire blank cartridge. A colored plastic heel cap or cup is inserted in the mouth of the cartridge case.

The studs used vary in length from  $\frac{5}{8}$  to  $2\frac{3}{4}$  in. long and are made of specially developed steel alloy. These studs, which are almost file hard, will resist shattering when driven. This is accomplished by a carefully controlled steel analysis and heat treating process. Studs are produced in 20 different sizes in 4 general types: Standard head (like a nail head), break off head, for semi-flush mounting, externally threaded and internally threaded.

The stud driver is equipped with a number of safety

devices which afford the operator and those nearby maximum protection.

A number of accessory fixtures for the tool have been designed for specialized jobs. Each accessory incorporates a safety shield, similar to that on the standard model without which they cannot operate. AA 188

**Squared-up Layout Paper**

PERRY-BROWN, INC., Cincinnati, Ohio, has introduced squared-up, layout paper for sheet metal fabricators. Strong, kraft type paper is imprinted with heavy dotted lines in 1 and 6 in. squares, and lighter lines and dots indicating  $\frac{1}{4}$  and  $\frac{1}{2}$  in. measurements.

The paper is an aid in the design and manufacture of sheet metal products where accurate full size patterns are desirable.

Available in 1,000 ft rolls, 49 in wide, weighing approximately 100 lb. Samples may be obtained on request. AA 189

**New Safety Tong**

ATLAS WELDING ACCESSORIES CO., Ferndale, Mich., is now offering metal working, safety tongs in an improved design.

The new tool is constructed of drop forged steel with long, broad nose members to provide a firm grip. Nose members are also thin at the tip, making them ideal for use in removing blanks from presses, selecting and

(Continued on page 142)

## Sequoia's "Closet'eer"

the really new  
furnace for '52

Here's the gas furnace that has the building industry buzzing — Sequoia's amazingly shallow "Closet'eer". Only 14 inches deep (65,000 B.T.U. model), assuring easiest ever installation in first floor closets or wall alcoves. 61" height for trouble-free basement positioning! The most all-ways-useful winter air conditioner on the market today!

Installers love the "Closet'eer"  
Every part positioned right on the face—every connection within easy arm's reach!



TELEPHONE OR WRITE FOR COMPLETE DATA TODAY

**SEQUOIA MANUFACTURING COMPANY**

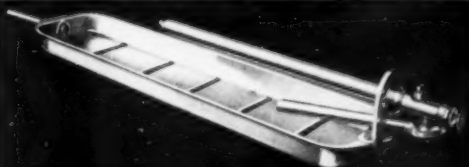
1000 BRITTAN AVENUE • SAN CARLOS, CALIFORNIA

America's fastest growing furnace manufacturer

Produced in 7 sizes  
65-80-100-120-140-160-200,000 B.T.U.  
Quality built — Competitively priced

*MORE  
PROFITABLE  
TO INSTALL*

# THERMO- DRIP *Automatic* HUMIDIFIER



- VALVES DON'T LIME UP
- NO STAGNANT POOL TO REHEAT
- EASY INSTALLATION
- ONE KIT TO PURCHASE
- SUPER-SENSITIVE THERMOSTAT
- OUTSIDE SCREW ADJUSTER

Our volume sales prove it... Thermo-Drip gives furnace owners greater customer satisfaction.

Prospects easily see the advantages of humidifying by automatically dropping water on a sizzling hot stainless steel pan.

Too, it's easy to demonstrate why this method is the most efficient, most dependable way to put moisture in the air.

Yes—Thermo-Drip gives faster, most efficient vaporization.

Write today for FREE literature. Dept. A-52

**Automatic Humidifier Co.**  
CEDAR FALLS, IOWA

I'M MISS **SNO-BREZE**  
WON'T YOU LET ME SWITCH  
SOME AIR COOLING PROFITS  
YOUR WAY?



Guaranteed by  
Good Housekeeping  
as an approved product

# SNO-BREZE AIR COOLERS

AND MONEY MAKING  
COOLER ACCESSORIES

with the GOOD HOUSEKEEPING

Seal of Guaranty

WINNING ACCEPTANCE

as the nations leading

**EASY SELLING**

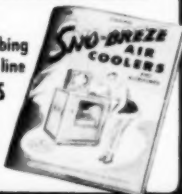
**ECONOMICAL**

**AIR COOLER**

Send for the  
catalog describing  
our complete line

**23 MODELS**

To win sales  
and PROFITS  
FOR YOU.



**PALMER MFG. CORP.**  
PHOENIX, ARIZONA

43 YEARS OF AIR CONDITIONING LEADERSHIP

AA-1



**AUTOMATIC  
HUMIDIFIER**

**NEW  
BETTER  
SIMPLER**

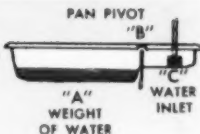
**principle of operation**



**ACTUAL SIZE OF  
VALVE ASSEMBLY**



*"Simple  
as ABC"*

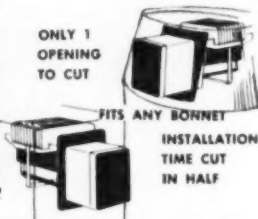


New Auto-FLO "100" Principle is as "Simple as ABC": The weight of water in pan (A) counterbalances (B) the water pressure at the orifice (C) located at end of feeder pipe. As the water evaporates, it lightens pan and causes more water to flow from orifice into pan. Because this cycle operates instantaneously, a constant water level is maintained in the pan.

Years of research by Auto-Flo have finally produced an Automatic Humidifier with no moving parts to stick, adjust or wear out. The large size orifice (shown above) replaces the commonly used float valve—the part that most frequently needs repair and adjustment. No tools are required to remove pan or plates for cleaning. Each unit comes complete with evaporator plates, saddle valve, tubing and necessary fitting.



**ONLY 1  
OPENING  
TO CUT**



**AUTO-FLO CORP.**

13526 Fenkell, Detroit 27, Mich.

Please send me full information on Auto-Flo "100" Automatic Humidifier.

NAME .....

ADDRESS .....

CITY .....

STATE .....

**AUTO-FLO CORP.**

13526 Fenkell Ave.

Detroit 27, Mich.

**Coupon on page 100**

removing single sheets from a pile, handling hot parts, lifting parts from solutions, etc.

By heating, the nose may be spread or reshaped as desired for handling special shapes. The tool is also available with a guard over the spring for index finger guiding. **AA 190**



**Safety tongs**



**Ornamental strap**

#### **Ornamental Metal Straps**

RIVAL STRAP CORP., New York, is producing ornamental metal straps for use with round or square leader.

The straps are offered in 3 in. aluminum and stainless steel, and 4 and 5 in. zinc or copper models. According to the manufacturer, the zinc and copper straps can be used with aluminum and stainless steel.

The company will be glad to help answer specific questions if sent on company letterhead. **AA 191**

#### **Combination Burner — Automatic Changeover**

PRAT-DANIEL CORP., S. Norwalk, Conn., has designed a combination oil-gas burner that is adaptable to the company's complete line of industrial type forced warm air direct fired heaters.

The combination burner permits instantaneous changeover. No piping or burner adjustments are needed. The changeover may be either by manual pushbutton or fully automatic. Completely automatic operation can be obtained by connecting with outdoor thermostat.

The burner operates for the greater part of the heating season on the most economical fuel available.

These combination burners have been extensively installed in the Middle West where in certain areas limited gas supplies have meant that no new straight gas heating loads could be imposed on the line. Gas companies permit this type of installation, however, because they can shut off supplies at any time without imposing a hardship on the user. **AA 192**



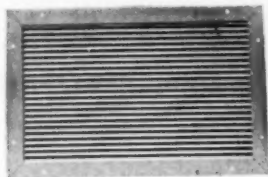
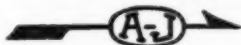
#### **Extra Capacity Grease Filter**

AIR FILTER CORP., Milwaukee, Wis., has developed a new grease filter with extra grease holding capacity. This filter is specifically designed to prevent entrained oil from entering exhaust ducts. Reduces fire hazards and prolongs life of fan motors and other equipment.

Sturdily constructed with bronze welded corners on galvanized frames, electro-plated woven wire cloth media, and expanded metal face plates. Low air resistance maintains circulation. Ideal for institutions, hotels and industry. **AA 193**

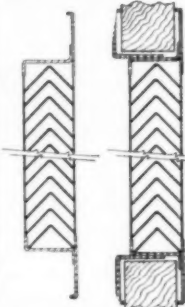


**Save Dollars and Days  
On Every Job... with "A-J"s!**



## NO-VISION DOOR AND PARTITION GRILLES

### AUXILIARY FRAMES FOR NEAT — FAST — EASY INSTALLATION!



This exclusive feature can save you hours on every job! Ends tedious fitting. Special telescoping frame slides over core of grille. Automatically adjusts to fit any door thickness from  $1\frac{3}{8}$ " to  $2\frac{1}{2}$ ". Gives same neat appearance on both sides.

These famous A-J Grilles are designed to save you time and money on every job. Series 700 (illustrated) Grilles are made entirely from steel. Special inverted "V" shaped louvers are securely set into end frames on  $\frac{1}{2}$ " centers. Metal corners are re-inforced with a metal backing, and spot welded.

A-J Grilles are completely sight-proof from either side, yet allow a maximum circulation of air. They are widely used for exhaust and return air grilles where horizontal, downward deflection is desired.

A-J Grilles are available in a wide range of sizes from 6" x 4" to 60" x 24", as well as special sizes required to fit any job. Grilles are finished in your choice of a variety of finishes: prime, Japan, baked enamel or lacquer.

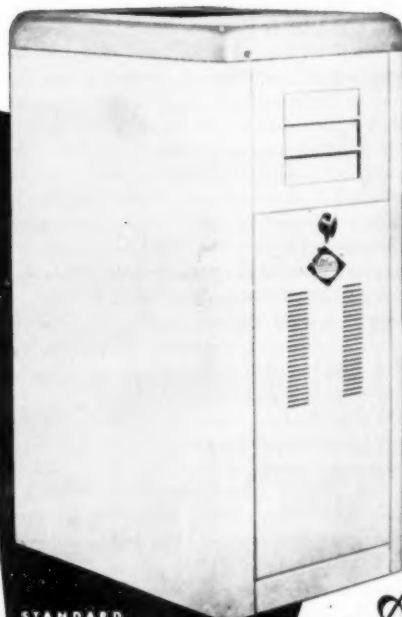
Find Out Today How A-J Can Save You Time and Money . . . .

### WRITE FOR OUR COMPLETE, ILLUSTRATED CATALOG

Listing Over a Thousand Types and Sizes of Grilles For Every Requirement.

**A-J MANUFACTURING CO.**

2119 Washington St. Dept. A Kansas City 8, Missouri



STANDARD  
HI-BOY VERTICAL

**ADD Glamour**  
to your  
**BOILERS AND FURNACES**  
with  
**ATTRACTIVE,  
DISTINCTIVE**

## Atlas STEEL CABINETS

Attractive, tailor-made Atlas Cabinets have stream-lined rounded corners, modern hardware and are beautifully finished in oven-baked hammer-oid in colors of your choice. There are no bolts or screws and it fits together smoothly and quickly, producing savings in installation costs.

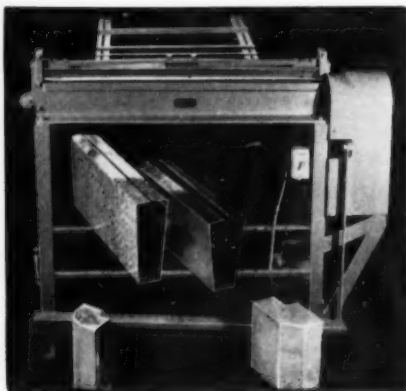
Atlas Cabinets are built to your specifications. They will carry your name and trademark and not that of Atlas. We can produce a full range of all models.

Send Your Specifications for Free Cost Estimates to

**Atlas MANUFACTURING CO.**  
EUSTIS AT ROBBINS ST • ST. PAUL 4, MINN.

**PRESENTING THE NEWEST  
MEMBER OF THE FALLSINGTON  
MACHINERY FAMILY!**

**THE FALLSINGTON MOTORIZED  
STACK BENDING MACHINE**



**THE FALLSINGTON STACK BENDING MACHINE** is equipped with progressive gauges to permit bending of rectangular duct at a rapid rate without the fatigue factor associated with the old time hand methods using conventional type Brakes. Will bend 26 gauge steel in lengths up 36" — also can be used for stack heads, elbows, etc. No marking necessary after gauges are set. Adjustable to wide selection of angles.

We are the manufacturers of the Multi-Notcher and Husky Press. Also of Rolling Machines, Beaders, and Crimpers — Pipe lock bumping machines and a line of hand tools — Clip punch-Drive Cleat Notchers and Omni shears.

**FALLSINGTON MANUFACTURING CO.**  
FALLSINGTON, PA.

Manufacturers

SHEET METAL MACHINERY, TOOLS & DIES

**NEW LITERATURE**

*Coupon on page 100*

**Saving Old Roofs**

TROPICAL PAINT & OIL CO., Cleveland, Ohio, offer a booklet entitled, *Saving Old Roofs* which illustrates how periodic maintenance can prolong roof life, bring a worn out roof back to life, and save the cost of a new one.

The book outlines a roof maintenance system, and shows how 90 per cent of leaky roofs can be restored, discusses the problem of high labor costs and gives suggestions as to how they can be reduced. It details each step in preparation of the roof from inspection and treatment of coping tile to the final steps of application over the entire roof.

Some of the conditions covered are:

Proper patching of holes and breaks in roofs of various types; detailed illustrations and text on repair of all types of flashings; where to look for concealed leaks and future trouble making factors such as shrinkage, rust and rot; how treatment with a re-saturant can restore a dead roof to new life and long efficiency.

Every type of industrial and commercial roof is covered: Flat roofs, sloping roofs, roofs of felt, paper and roll roofing; built-up roofs, composition roofs, roofs of tar and gravel or slag; concrete roofs, tin, corrugated and other metal. *Saving Old Roofs*, outlines a system of maintenance and repair for each type. AA 258

**Domestic Refractories**

WALSH REFRACTORIES CORP., St. Louis, Mo., manufacturing a complete line of refractories materials for the domestic heating industry, has released a new bulletin covering its entire line.

Included is complete information on interlocking combustion chambers and baffles, refractory castables, air setting cements, plastic furnace liners, burnt refractory combustion chambers and asbestos furnace cement.

Details of installation, specifications, packaging and other informative data is also included. AA 259

**Engineering Bulletin for Blower Assemblies**

VIKING AIR CONDITIONING CORP., Cleveland, Ohio, manufacturers of furnace blowers, humidifiers, window and attic fans, is offering a condensed engineering bulletin covering complete design dimensions and performance data of all their blower assemblies.

The 6 page bulletin contains information helpful to the furnace designer or engineer for selecting a blower of proper size, capacity, and operation.

The new bulletin features dimension drawings and halftone illustrations visually describing all possible blower arrangements, types of bases, and motor locations in easy to read, compact style. AA 260

**Record Retention Plan**

REMINGTON RAND INC., New York, N. Y., has published, in brochure form, a plan for record retention and de-  
(Continued on page 146)



SERIES  
O & G

# Sell HESS Climate Masters

for  
greater  
profits!

**GAS**



MODEL 75-G



MODEL 800-GH

MODERN  
EYE APPEAL  
IN  
GLEAMING



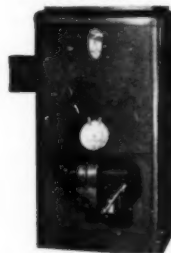
MODEL 80-VM



MODEL 800-OH

*White*  
ENAMEL

**OIL**



MODEL 75-O

EXCLUSIVE SALES  
FEATURES  
IN  
AN OUTSTANDING LINE  
OF FURNACES

**COAL**



SERIES 300

Heating Engineers  
Since 1873

TERRITORY PROTECTION  
FOR QUALIFIED  
DEALERS

Write or Wire For Details

*The Hess  
Company*

CHICAGO 50, ILLINOIS

## FOR A BETTER FLASHING JOB



use the new  
one-piece

## CHASE® THRU-WALL FLASHING

and Cap Flashing Receiver

This new full-weight copper thru-wall flashing bonds in ALL directions. What's more, the integral cap flashing receiver permits easy installation of cap flashing *after* the base flashing and roof are installed. No plugs or wedges are needed to keep the receiver open.

The cap flashing need not be bent after it is inserted and locked in the receiver. This means that *cold rolled* copper can be used for the cap flashing resulting in a neater, more watertight installation at reasonable cost.

Send coupon for FREE folder which tells how you can save time and do a better job with this new flashing development.

## Chase BRASS & COPPER

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

\*The Nation's Headquarters for Brass & Copper

Albany†	Cincinnati†	Houston†	Minneapolis	Pittsburgh	Seattle
Atlanta	Cleveland	Indianapolis	Newark	Providence	Waterbury
Baltimore	Dallas	Kansas City, Mo.	New Orleans	Rochester†	
Boston	Denver†	Los Angeles	New York	St. Louis	
Chicago	Detroit	Milwaukee	Philadelphia	San Francisco	(Sales office only)

Chase Brass & Copper Co., Dept. AA552  
Waterbury 20, Conn.

Please send me your free folder on the new Chase One Piece Thru-Wall Copper Flashing and Cap Flashing Receiver.

Name \_\_\_\_\_  
Position \_\_\_\_\_  
Firm \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_



# Sab-Mo

FOR THE BEST  
IN ASBESTOS



SALL MOUNTAIN COMPANY • Mill and Office at Hamilton, Ohio

#### Coupon on page 100

struction. The plan has been designed to aid management in disposition of useless records and safe storage of others.

The 24 page handbook for management covers: Classification of business records, efficient record handling, how to organize a retention plan, how to operate a retention, and the case history of a record retention program of a large utility corporation.

The handbook also contains a checking chart listing various types of records, and length of their retention. It is illustrated with reproductions of various forms used for record retention and destruction. AA 261

#### **Replacement Capacitor Catalog**

SPRAGUE PRODUCTS CO., N. Adams, Mass. Complete listings of replacement units for 110, 125, 160, 220, and 320 volt service as well as new motor capacitor types in both metal and plastic cases; smaller capacitor sizes, and new speedy change terminals are among the new developments included in the new catalog.

Handy table included in the catalog gives complete data for choosing the correct replacement capacitor for practically all makes of heavy duty equipment.

Also included in the catalog is a complete listing of hardware for practically any motor. AA 262

#### **Air Diffusers**

ANEMOSTAT CORPORATION OF AMERICA, New York, N. Y. A 64 page selection manual containing technical data for simplifying choice of correct air diffusers in air conditioning systems.

This second revised edition contains a complete new section on units for high pressure, high velocity systems.

Illustrated with photographs of the company's various types of diffusers, extensive tables on performance, selection and dimension data, installation specifications, and case examples, this working manual shows how proper locations and correct number of required units are determined.

The plain language treatment of: How to select air diffusers and accessories, typical specifications, how to install, prices and weights makes the information clear to the layman as well as the technician. AA 263

#### **Pump Reference Chart**

TUTHILL PUMP CO., Chicago, Ill., has developed a new type of reference chart on small pump applications.

The chart in convenient table form, lists the various types of Tuthill pumps, services for which each is built, performance characteristics, types of packing, styles of mounting, and features that distinguish each model.

Copies of this helpful reference table are available on request. AA 264

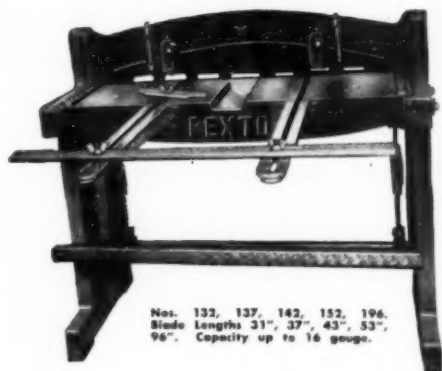
#### **Fan and Blower Catalog**

CHELSEA FAN & BLOWER CO., Inc., Plainfield, N. J., manufacturers of exhaust fans for residential, commercial,

(Continued on page 148)

# PEXTO...Best Buy

## in SQUARING SHEARS



Nos. 132, 137, 142, 152, 196.  
Blade Lengths 31", 37", 43", 53",  
96". Capacity up to 18 gauge.

Designed\* for easy accurate cutting.

Available in sizes from 30" to 96".

Furnished complete with Front Gauge, Bevel Gauge, Graduated adjustable side Gauge and the famous PEXTO Rack and Pinion graduated precision Back Gauge.

\*Design Pat. DES 157,611.

THE PECK, STOW & WILCOX CO. — since 1785 — Southington, Connecticut, U.S.A.

**PENN**  
**DYNAFANS**  
GIVE VENTILATION PROBLEMS  
**THE AIR...**

No doubt about it—Penn Dynafans increase employee efficiency in your customer's plants by exhausting the "hot spots." This rugged unit can be depended upon to handle the toughest ventilation problems . . .

- Motors out of the air stream, safely remove dust, heat, fumes, vapors, etc.
- Economical to install and operate.
- Sizes range from 250 c.f.m. to 30,000 c.f.m.
- Pulling power is positive and units will not overload regardless of resistance.
- Units are quiet running and have a low clean silhouette.

Write for complete literature today.  
Representatives and Distributors in Principal Cities.

**PENN VENTILATOR CO.**  
PHILADELPHIA 40, PENNSYLVANIA

FOR MORE THAN 25 YEARS THE BUILDERS' **ROOF** TOP LINE!





### Coupon on page 100

and industrial use, has issued a complete catalog containing price sheets and engineering data for 30 fan types in over 300 sizes.

Included are complete specifications, dimensions, installation diagrams and product photographs, as well as extensive information on the proper selection and installation of fans for every industrial commercial and residential requirement.

The catalogue has been designed for the use of architects, engineers, contractors, distributors, and dealer sales engineers and is available on request. AA 265

### Plastic Paint

CORROSIONITE CORP., New York, N. Y. An eight page bulletin explains a plastic paint which protects against salt air and water, tropical climates, chemical corrosion, and other similar destructive elements.

It explains systems the company has developed for painting with spray, brush, or by dipping. Suggested uses of the coating by railroads, chemical processing plants, food and dairy, industries, public utilities, and in petroleum and marine fields are outlined.

Specific information for application of the coating will be sent on request. AA 266

### ASHVE Guide

AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS, New York, N. Y., has issued its 1952 guide for

the industry. The 30th edition has a total of 1,520 pages and represents an increase in usefulness as well as size. 32 pages of information have been added to the technical data section.

New codes of interest and latest editions of all existing codes have been included in the enlarged section of codes and standards. Names and addresses of organizations who can supply a copy of the codes and standards are also given.

One of the special features of the guide is the larger catalog section which contains accurate data and specifications on the latest products of the 277 manufacturers.

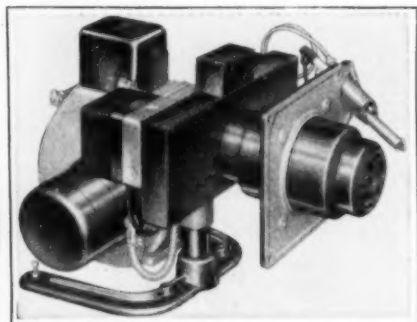
The modern equipment section now has a 32 page index, and names of manufacturers are classified according to categories. A cross index is provided for both the catalog data and technical data sections. AA 267

### Heating Equipment For The Home

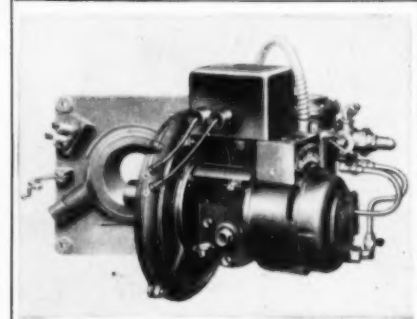
COLEMAN COMPANY, Wichita, Kan., home heating manufacturer, combines cartoons and jingles in a 16-page comic book to put across the message that it has a type and model of heating equipment for every home.

Sales literature on major appliances usually is short-lived and the comic book approach was adopted to create a presentation that would have a longer life expectancy in the prospect's home.

Entitled, The Case of the Colemanized Families, the book is in four colors and can be imprinted with dealer's name and address. AA 268



BANKHEAT DUAL-FUEL, Pressure Type, 5 to 54 H.P.



30-AV DUAL-FUEL, Rotary Burner, 20 to 400 H.P.

*The new way to bring heating costs down*

**INSTALL**

## **JOHNSON Dual-Fuel BURNERS** THAT OPERATE AUTOMATICALLY ON EITHER *Oil or Gas!*

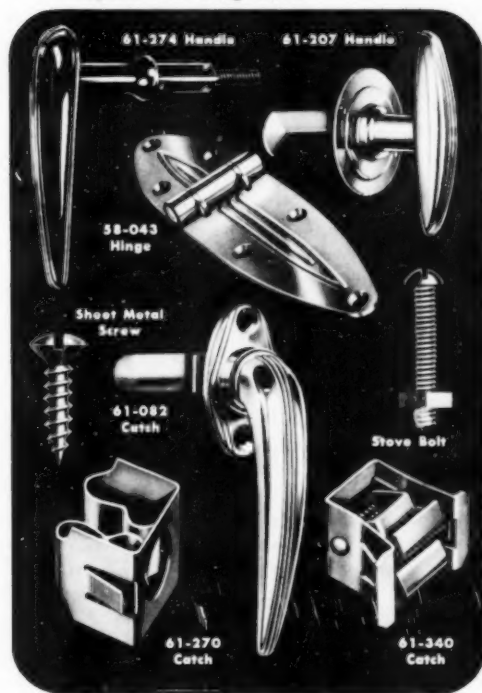
In regions where low-cost gas is available part of the time but not available constantly, Johnson Dual-Fuel Burners are an ideal installation. They enable the user to change from one fuel to the other whenever it is advantageous. If gas is available and cheaper . . . he can burn gas. When gas is not available, or when oil is cheaper . . . he can burn oil. And all in the same burner. Just a flip of the switch makes the changeover. (For a little extra cost, he may have an Automatic Changeover Switch which is controlled by outdoor temperature or by gas pressure.)

These burners are available in Domestic, Commercial and Industrial sizes and types. All are completely automatic and equipped with the finest electronic controls. They are engineered, tested and precision-built to give lasting service and satisfaction. See them at your nearest Johnson dealer, or write direct.

.....*Johnson Oil Burners*.....  
S. T. JOHNSON CO.  
940 Arlington Ave., Oakland 8, Calif.  
401 No. Broad St., Philadelphia 8, Pa.

# NATIONAL LOCK HARDWARE FOR METAL APPLICATIONS

for use on stokers • oil burners  
• air conditioning equipment  
• gas heating units • humidifiers  
• space heating units



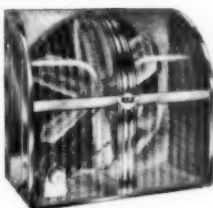
## Get All Your Hardware From 1 Dependable Source

One-source buying from NATIONAL LOCK will simplify purchasing, simplify control and lower shipping costs... while assuring you of uniform high quality. NATIONAL LOCK offers a wide selection and prompt delivery in step with your needs.



Write for Complete Information  
**NATIONAL LOCK COMPANY**  
ROCKFORD • ILLINOIS

## Selling REX AIRATE Fans is a *BREEZE*



In the Air Controls line for 1952 there are fans to meet your every price and performance need—twenty-eight models, six types, nine sizes of REX Airate air cooling, attic, exhaust, furnace, window and ventilating fans.

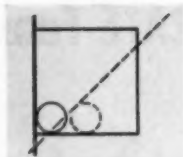
And, you can make money on all of them. Your customers see 'em, like 'em, buy 'em—so selling REX Airate fans is a breeze. Start this season on an all-year fan merchandising campaign with the complete REX Airate line and watch your fan profits climb.

See your Rex Airate distributor or write today for complete details on the fans that know no season!

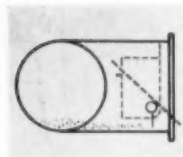
### AIR CONTROLS, INC.

Division of the Cleveland Heater Co.

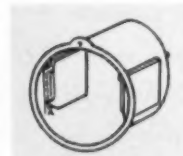
2310 SUPERIOR AVENUE • CLEVELAND, OHIO



**ROLLING TYPE HINGE PIN**  
means no friction, no binding, no need for oiling, no fear of corrosion. Oil-Center Gate Mounting lets draft operate on a greater effective area.



**EXTENDED HOUSING**  
places gate well outside the flow of fouling soot and gases. Warping or binding of gate are eliminated assuring full sensitivity.

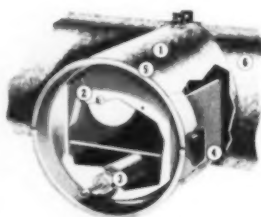


**SIDE WINGS** mean greater accuracy as they allow the area of the opening through the control to increase uniformly. Gate is shaped to fit closely to wings.

1. Made of Heavy Materials - Longer Lasting.
2. Balanced at Factory - More Accuracy.
3. Quickly Responsive - Saves Fuel.
4. Rocker Type Fulcrum - No Friction.
5. No Warping, Clogging - No Service Calls.
6. Free Smoke Passage - No Sooting Up.



there's  
no  
substitute  
for  
field  
performance



The Draft Control that's nationally advertised in **BETTER HOMES & GARDENS**



## OHI Talks Sales, Engineering and Fuel Oils —

(From page 45)

used with a particular type of burner. He presented suggested new specifications and pointed out that if the user of an oil burner can be assured that he can purchase oil by number and get what he needs for his burner, great good will result to the distributor of fuel oil, the manufacturer of burners and the oil burner user.

In the discussion which followed, oil burner manufacturers seemed to be in favor of Mr. Resek's proposals, but representatives of the fuel oil producers brought up many difficulties involved in such procedure. In a later discussion in the Commercial-Industrial Division session, a representative of Socony-Vacuum pointed out that oil companies are striving to get all the high-priced gasolines and distillates possible out of crude, with residual oils becoming a smaller and smaller percentage. As a result, characteristics of heavy fuel oils are changing and, admittedly, are affecting oil burning equipment. He doubted if exact specifications could be attained in the heavy oils and explained that it was also a matter of economics. However, he assured the audience that there would be ample supply of residual oils and that adverse changes can be minimized by the refiner if it is profitable to do so.

The Performance of Pressure Atomizing Nozzles in Domestic Oil Burners was a paper presented by Eugene O. Olsen, Delavan Manufacturing Co. This paper will be run in later issues of **AMERICAN ARTISAN**. It explains the details of nozzle design and the care with which nozzles must be handled. It shows how atomization of oil is affected by various conditions such as expansion of the metal and small particles of dirt and lint.

E. B. Delgass, Socony-Vacuum Oil Co., spoke on Improving Start-Stop Characteristics of High Pressure Burners. He described the smoke and soot generating tendencies of high pressure gun-type oil burners and presented principles for preventing smoke during starting and stopping which should materially improve combustion efficiency.

## Entertainment

The Accessory Division held a luncheon at which Senator Homer E. Capehart was the speaker on the subject, Our Greatest Asset — the American System of Government.

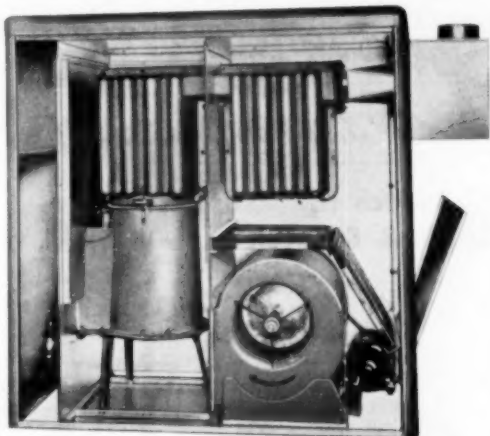
The annual OHI banquet was the big event of the meeting, with A. T. Atwill, a past president of OHI, acting as toastmaster.

The Old Timers turned out some 400 strong at their usual famous dinner and jamboree.

## Exposition

The exposition was fully previewed in the March issue of **AMERICAN ARTISAN**. It ran from Monday through Friday and was the biggest show of its kind in OHI history. At the OHI business meeting it was announced that income from space totalled \$137,900 with a net profit to the Institute of \$80,000.

*Here's the key to*  
**BIGGER and BETTER PROFITS!**  
*the* **ZEPH-AIR**  
**COMPLETELY AUTOMATIC**  
**GAS FURNACE**



We mean it, too! The right key will open the largest door with little effort . . . and it's just as simple to sell the ZEPH-AIR when you know all the facts. For instance . . . you've got a prime selling point in the exclusive twenty year warranty which guarantees against cracking, or burning out of castings, and defective workmanship and materials . . . NO risk to your customer there! Then, too, you can sell the maximum heating efficiency and low upkeep which are assured by exact engineering and finest workmanship; and the modern, streamlined design which re-

quires less than eleven square feet of floor space. You can't miss with the ZEPH-AIR, and we will be happy to give you more reasons why if you'll send us a postcard request today.

**XXth CENTURY HEATING  
 & VENTILATING COMPANY**  
**AKRON OHIO**

*It's time to check your stock  
 of warm air heating equipment  
 and prepare for a busy season*

## For **QUALITY-SERVICE-PROFIT** . . .

### Fill Your Needs Now with **EXCELSIOR** Products

Galvanized Pipe, Elbows, and Angles  
 Gravity and Forced Air Fittings (all types)  
 Blued and Walnut Stovepipe, Elbows, Tees, and Reducers  
 Gas Diverters and Sheet Metal Specialties

*Write for new 8-A catalog of prices and details on complete line.*

## **THE EXCELSIOR STEEL FURNACE COMPANY**



**118 S. CLINTON ST.**

**Phone: FRanklin 2-8120**

**CHICAGO 6, ILL.**

EXCELSIOR HEATER & SUPPLY DIV.  
 The Excelsior Steel Furnace Company  
 879 Hersey Ave., St. Paul 4, Minn.  
 Telephone: NEster 7255

BREX & BIELER DIV.  
 The Excelsior Steel Furnace Company  
 229 Marlon St., Brooklyn 33, N. Y.  
 Telephone: CLenmore 2-7881

EXCELSIOR HEATING SUPPLY DIV.  
 The Excelsior Steel Furnace Company  
 528 Delaware St., Kansas City 6, Mo.  
 Telephone: VIctor 3715

# Speed up Shearing and Hammering!

Switch to  
**BLACK & DECKER POWER**



**BLACK & DECKER ELECTRIC PORTO-SHEARS\*** cut sheet metal too tough for snips. Speed up jobs where snips are slow. Save you time and cut your costs on hundreds of jobs. Fast, powerful shearing action eliminates hard muscular strain. Easy to follow straight lines, irregular patterns, curves to small radius because *cutting action is always visible!* Two models: 12-gage and 16-gage capacities.



**BLACK & DECKER ELECTRIC HAMMERS** speed up such jobs as drilling holes for toggle bolts in concrete and brick—cutting mortar out of joints to install flashings—cutting through walls, shaping timbers, channeling floors. High-speed, amazingly husky, deliver thousands of sharp, positive hammer blows per minute. Drive star drills, speed bits, chisels, many other tools. Light, compact, completely self-contained, require no transformer or extra equipment. Four models: rated by drilling capacity in concrete for  $\frac{1}{2}$ ",  $\frac{3}{4}$ ",  $1\frac{1}{4}$ ",  $2$ ".

**SEE YOUR NEARBY B&D DISTRIBUTOR** for demonstrations, full details, expert help in selecting the right tools for your job. Write for free catalog to: **THE BLACK & DECKER MFG. CO.**, 682 Pennsylvania Ave., Towson 4, Maryland.

\*Trade Mark Reg. U. S. Pat. Off.

**DRILLS • SANDERS • SCREW DRIVERS • BENCH GRINDERS**

LEADING DISTRIBUTORS EVERYWHERE SELL

**Black & Decker**  
PORTABLE ELECTRIC TOOLS

## INDUSTRY ITEMS

AT ITS ANNUAL MEETING March 11, Perfection Stove Co. added three new members to its board of directors, bringing the total to 15.

The new board members are J. H. Rasmussen, vice president and director, of appliance sales; William H. Haag, vice president in charge of manufacturing; and James A. Schold, New York investment broker with the firm of Neergaard Miller & Co.



J. H. Rasmussen



W. H. Haag

Mr. Rasmussen came with Perfection in October of 1951 to head the company's cooking and heating appliance sales. Previously, he had held important posts with the Crosley Corp., Grunow Corp., and Zenith Radio Corp., before heading his own organization of manufacturers representatives in Chicago.

Mr. Haag has been with Perfection Stove Co. since 1928, when he was employed as production engineer. He subsequently served as production manager of the company's Platt and Ivanhoe plants and as works manager of both plants. He was named vice president in charge of manufacturing in early 1951.

**APPOINTMENT OF JOHN C. DAVIDSON** as assistant manager of application engineering of Airtemp Division, Chrysler Corp. was announced recently by J. F. Knoff, general sales manager.

Davidson joined Airtemp in 1947 as a field engineer in the Minneapolis region. He held that position until his present appointment.

He is a graduate of the University of Minnesota, a registered professional mechanical engineer and a member of ASHVE.



John C. Davidson

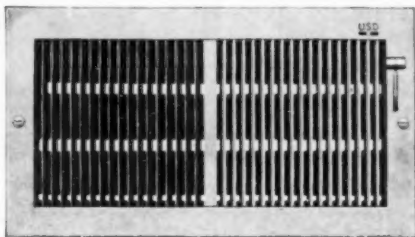


W. A. Matheson, Jr.

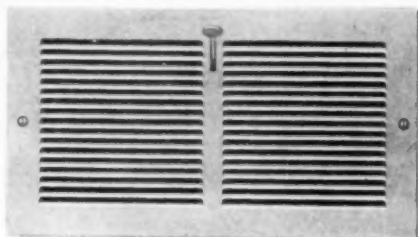
W. A. MATHESON, JR., has been appointed vice president in charge of sales for International Heater Co., Utica, N. Y.

Matheson was formerly with Perfex Corp. as Chicago





No. 4432 Airo-Flex Register, flexible fins and multi-louver valve. Also furnished with single valve (No. 4032).



No. 7032 Airo-Flex single valve Register, adjustable fins.

For fine registers and grilles for all purposes — gravity, forced air, or air conditioning — you can depend on Auer. Our line is **COMPLETE** for all your needs. Auer registers are made **ONLY** by The Auer Register Co.

Ask for Auer Register Book showing all models — or for bulletin on perforated grilles.

**THE AUER REGISTER CO., 6600 CLEMENT AVE., CLEVELAND 5, OHIO**  
Canadian Distributor, Marchand Furnace, Ltd., Tilbury, Ont.

*Auer*

# REGISTERS

& GRILLES for AIR CONDITIONING & GRAVITY

It's the **LOW DOWN** DIRT trapped by  
**WILSON'S HAIR FILTERS**  
that **GUARANTEES LONGER LIFE**

In Wilson Hair Filters the entire dust-holding capacity is completely utilized. This means, *no surface dust stopping only*, but Full-Depth Dust Trapping at its best . . . and many extra months of filter life.

The reasons are so simple:

1. The hair media in Wilson Hair Filters act in the same manner as Mother Nature's proven way of filtering the air you breathe. It's the *hair* that cleans the air . . . more easily, more effectively, more economically.
2. The multi-directional distribution of the hair in Wilson Hair Filters literally invites all dust and dirt to come in and be trapped throughout the entire filter interior.
3. Most brands of air filters require oiling on their inlet surfaces. This stops dust prematurely, loads up the incoming air side and materially shortens filter life.

Wilson Hair Filters are not oiled on the inlet side. Instead, they receive an even distribution of mineral oil on their outlet surface, which:

- (a) augments the already amazing ability of the hair itself, to catch and hold dust, and—
- (b) builds an impregnable barrier which halts dust and dirt after reaching the furthestmost practicable penetration point.

**WILSON & CO., INC.**

(Air Filter Division) 4100 South Ashland Ave., Chicago 9, Ill.

Wilson Hair Filters are another quality product of Wilson & Co., world-famous for meat products, sports equipment, pharmaceuticals, hair products, etc.

The famous Edgesool,  
the original Hair Filter  
with the patented self-  
sealing edge.



The popular Honey-  
comb, the dressed up  
Hair Filter that is so easy  
to handle.

Save delay. Save dollars. Save doubt. Send for **FREE** sample with details and prices.



# WILSON'S HAIR FILTER



**DON'T THROW ME AWAY!  
I'M GOOD FOR MANY MORE  
YEARS IF YOU FIRE ME  
WITH A**



**NEW SUN-RAY**  
SERIES "VS"  
**VERTICAL FLAME  
BURNER**



**The New  
Addition to the  
Great Sun-Ray  
"Shell" Head  
Burner Family**

- 1 — Burns less oil — 500° to 600° F. hotter flame.
- 2 — No combustion chamber required.
- 3 — No complicated hearth to build.
- 4 — No moving parts in combustion area.
- 5 — Burns catalytic oil cleanly and completely.
- 6 — Delivers heat directly to boiler sections or furnace heat exchangers.
- 7 — Built-in delayed action oil brake
- 8 — Easy to install — requires less service.
- 9 — Tops in consumer appeal.

**Famous the World  
Over for Quality  
and Economy**



**SUN-RAY BURNER MFG. CORP.**

139-34 QUEENS BOULEVARD

JAMAICA 2, N.Y.

district sales manager and manager of the government contract division. Prior to that he had been manager of contract sales for Williams Oil-O-Matic Division, Eureka Williams Corp.

K. A. WEATHERWAX, president of Acme Industries, Jackson, Mich., announces the opening of a new Chicago office. It is larger, more convenient, and will have a larger staff to serve the Chicago area. R. T. Hanson will be regional manager, with William E. Lloyd, George V. Mercer, and Ray Nast as sales engineers. All are well known in the Chicago area. Lloyd has been associated with Acme for 15 years. Mercer enters the Chicago office following a transfer from the home sales office in Jackson. Nast has joined the firm and has wide experience in the field.

At the same time, the recent appointment of Laurence Trant and Co., Norfolk, Va., as Acme representatives was announced. The company will feature the complete line of air conditioning and refrigeration equipment. Their territory will include the state of Virginia with the exception of Fairfax county and the city of Arlington.

ESTABLISHMENT OF NEW branch sales offices of Owens-Corning Fiberglas Corporation in Tampa, Fla., and New Orleans, La., has been announced by E. W. Smith, vice president in charge of sales branches.

A. C. Wilson, who joined Fiberglas when it was formed in 1933, has been named manager of the Tampa branch. Walter W. A. Boden, associated with the com-

**Am-Pe-Co** SINCE 1929  
"Unipack"  
*Furnace Blower*  
"DOC" (WITH THOUSANDS OF SATISFIED CUSTOMERS) SAYS:  
*Quiet as a CAT'S PURR*

**FIRST furnace blower made commercially in the Middle West. . . TWENTY years of service in thousands of homes . . . continuing demand is PROOF of PREFERENCE for QUIETER operation.**

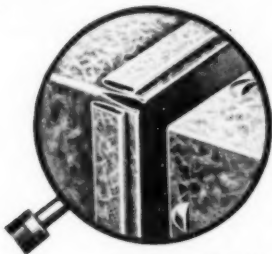
**It's the operation that counts in a blower. Rugged operation that's "Quiet as a Cat's Purr" and long life are assured when you install the UNIPACK.**

**AMERICAN MACHINE PRODUCTS CO.  
MARSHALLTOWN, IOWA**

## ADELTA takes the Work out of DUCTWORK!

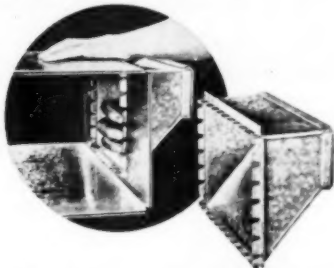
ADELTA warm air systems have been redesigned from plenum to register...bringing you many exclusive fittings and time-saving features like those illustrated. And since ADELTA ducts and fittings cost no more than old-type units, your faster installation time means bigger profits.

Investigate the ADELTA line today! Send for our illustrated catalog, showing the complete line of standardized ducts, pipes and fittings. No obligation.



### ONE-PIECE SNAP-LOCK CLEAT WITH THE TAPERED LEADING EDGE

...is an exclusive feature on all ADELTA Stack, Trunk and Fittings. You just push two sections together, and presto!—you have a rigid, leakproof joint...without any drilling, notching or crimping to slow up the job. Cleat can't get lost in shipment or on the job because it's formed from the same sheet as the fitting.



### NEW PRE-NOTCHED COLLAR EDGES

...save time on every collar edge connection because they're easily closed by finger pressure. No need for the installer to notch the edges, straighten them with pliers, and hammer them closed. Notches are die-cut in a U-shape, and corners are rounded to prevent finger injury. Provided on all 4 sides of fittings with collars—at no extra cost.



**ADELTA**  
MANUFACTURING COMPANY, INC.  
2103 Ellsworth Street • Philadelphia 46, Penna.

FOR  
NEW  
FURNACES

FOR  
FURNACE  
REPAIR



## "Tops" IN HEAT RESISTANCE AND ADHESION . . .

THARCO has successfully withstood temperatures up to 2500° at Detroit Edison and for long periods—that's nearly 50% higher than normal warm air furnace temperatures.

THARCO seals BOTH sides of the joint—gas-tight, smoke-tight—yet it's resilient enough to care for all normal expansion and contraction...and, Mister, it STAYS PUT permanently, thanks to the secret Armstrong formula!

THARCO Asbestos Furnace Cement comes in two colors: Black and Light Gray, in 1-lb. to 350-lb. metal containers—ready to use. See your jobber, or write us today for complete information.

**THE  
ARMSTRONG  
COMPANY**

4065 SOUTH LA SALLE STREET, CHICAGO 9  
2411 SOUTH POST STREET, DETROIT 17  
2411 SWISS AVENUE, DALLAS 1

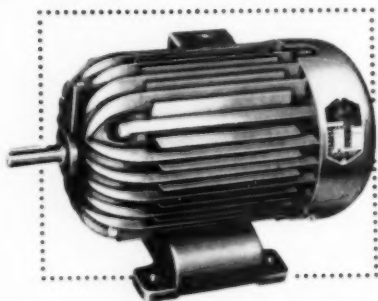
RICHMOND, CAL. and  
CHARLOTTE, N. C.



# New Hoover® Motors



*totally  
enclosed*



If you make a motor-driven product that must work where there's moisture, heavy dust, wood chips, or metal shavings—these new, totally enclosed Hoover Motors are for you.

And you are getting more for your money than with any comparable motor on the market.

There are both *self-cooled* and *fan-cooled* models—newly designed to keep trouble out and performance high. No openings to let moisture in. No blind passages to catch dust and dirt.

#### **A working giant in a small package**

Polyphase motors through 5 H. P. Capacitor start motors through 3 H. P. All built in NEMA frames. Extremely compact. More horsepower for each pound of motor—more motor for your money in every way.

Made and guaranteed by the makers of the famous Hoover Cleaners, who have been building precision motors since 1934. World-wide service facilities—always ready to protect your good name.



THE HOOVER COMPANY, Kingston-Conley Division  
Dept. AA568 Brook Ave., North Plainfield, N. J.

Please send catalog showing and describing complete line of Hoover Motors.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_

State \_\_\_\_\_

pany since 1942 and its resident sales representative in New Orleans since 1949, was appointed branch manager there.

The Tampa branch will serve Camden and Charlton counties in Georgia and all of Florida, except areas west of Liberty and Franklin Counties. The branch in New Orleans will serve southern Louisiana, southwestern Alabama, southern Mississippi and southwestern Florida.



Walter W. A. Boden



A. C. Wilson

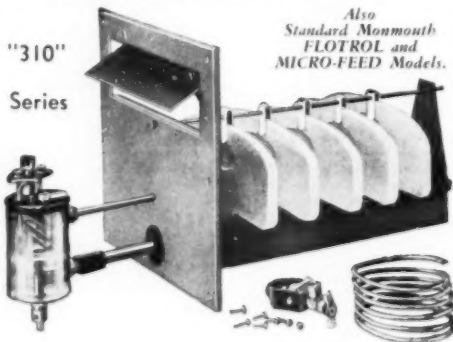
Mr. Wilson, who has 30 years experience in engineering and sales, joined Owens-Corning as sales manager of the company's insulation products. He was named manager of the sales engineering and specifications division in 1941.

Mr. Boden joined the company as general office manager in the general offices in Toledo, serving in that capacity until his appointment as New Orleans resident salesman almost three years ago.

THE APPOINTMENT of William M. Kreiling, Kansas City, Mo., as sales representative for the Mor-Sun Furnace

## MONMOUTH HUMIDIFIERS

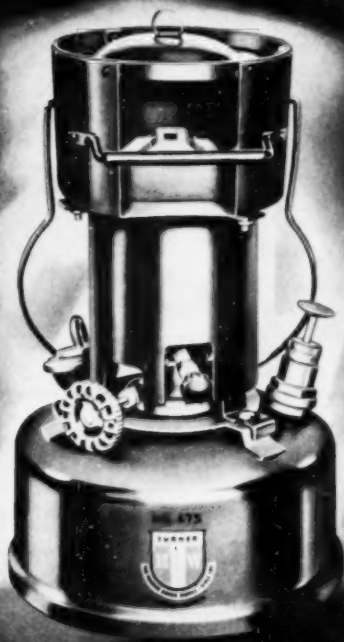
● The "310" is designed for modern smaller furnaces and air conditioning units up to 100,000 BTU capacity. It is shipped completely assembled, and quickly installed from outside the furnace. Front plate includes combination plenum register and inspection door, is hinged to copper pan and fits vertical or slanting plenum. Register has pivot shut-off valve, and equals an 8 x 4 register in free area. The "310" has genuine Flotrol valve and Monite ceramic diffusing plates. Details and prices on request.



**The Cleveland Humidifier Company**  
7802 Wade Park Avenue, Cleveland 3, Ohio

# TURNER

*Quality Since 1871*



## No. 475 Low Pressure TINNER'S FIRE POT



See  
Your  
Jobber

● Smokeless...sparkless...sootless! Complete with Turner's exclusive "Carburetor Control" for more perfect combustion; also a flame control—for exact heat desired—which automatically cleans the orifice. Construction assembly permits quick, easy accessibility...windshield, top-plate, and bail handle are one unit, and can be lifted from tank by loosening one wing nut. Burner coil is made of extra-heavy seamless steel tubing, protected by sturdy outer jacket that maintains heat without overheating; can be generated and used in heavy wind. Fuel capacity—one gallon; burns for 9 hours on one filling. Get details, too, on Turner's popular Plumber's Fire Pot (No. 275); also Turner's complete line of Blow Torches.

### THE TURNER BRASS WORKS



AMERICAN ARTISAN, MAY, 1952

**FOR BETTER  
DOMESTIC HEATING  
INSTALLATIONS...**

**Select  
WALSH-MADE  
REFRACTORIES**



OIL BURNERS



STOKERS



GAS FURNACES

Fuel savings for your customers... greater profits for you... are the extras you get in the complete line of Walsh-made products for the heating industry. That's because Walsh offers more in experience, skill and facilities as a dominant manufacturer of high grade refractories for over fifty years. Plus values in Walsh products are the result of careful selection of raw materials, modern production methods and exhaustive tests that assure top quality and utmost dependability.



**Walsh-made PeTeCo Combustion Chambers**—Precast interlocking combustion chambers that arrive at high furnace temperatures immediately... assure complete burning of oil... full efficiency.



**Walsh-made PeTeCo Baffles**—Tripod type precast baffles with burnt refractory legs. Saves fuel... increases efficiency of heating unit.



**Walsh-made Refractory Castable**—Walsh H & B Castable forms a durable, one-piece air and gas tight lining. Sets up stronger. Lasts longer.



**WALSH**  
REFRACTORIES CORPORATION  
ST. LOUIS, MISSOURI, U.S.A.

WRITE FOR CIRCULAR  
Free bulletin describing the unusually complete line of Walsh refractories for the domestic heating industry will be sent upon request. Contains helpful information, specifications, sizes, etc. Send for copy today.

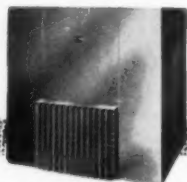
FOR OVER 50 YEARS  
MANUFACTURERS OF HIGH GRADE REFRACTORIES

101 Ferry Street • St. Louis 7, Missouri

FACTORIES: ST. LOUIS, MO. AND VANDALIA, MO.



# BIGGER SUMMER Profits With



LOW COST *Comfort* COOLING

## ALTON

(Air Washer Type)

EVAPORATIVE COOLERS

✓ CHECK SOME OF THESE REASONS WHY  
ALTON DEALERS HAVE SOLD OVER 12,000  
INSTALLATIONS IN THE LAST SIX YEARS!

- ★ CABINET BUILT ENTIRELY OF GALVANIZED STEEL!
- ★ TURBOSPRAY! Water distribution assembly! One single hermetically sealed assembly for recirculation and spraying cooling pads.
- ★ TWO SETS OF MATS! Eliminates "pull through of water" (Mats Aspenwood or Fiberglass).
- ★ AIR WASHER SECTION CONTAINS ALL WATER! No water in the blower section of this unit.
- ★ SHIPPED FULLY SET UP! Ready to install... No Delays... No Missing Parts... No Inconvenience!

The ALTON Air Washer Unit cools by evaporation... No costly refrigeration is used... It is the ideal means of providing:

LOW COST *Comfort* COOLING

TO THOUSANDS OF

Retail Stores — Factories — Churches — Cafes  
Night Clubs — Etc.

PROMPT DELIVERY *Now* ON ALL SIZES!

TEAR OUT AND MAIL TODAY!

## ALTON

MANUFACTURING  
COMPANY

1112 Ross Ave. Dallas, Texas

Gentlemen: Please send me folders and complete price information on the ALTON Evaporative (Air Washer Type) Coolers. No obligation of course.

Name \_\_\_\_\_

Address \_\_\_\_\_

Firm \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Div., Morrison Steel Products, Inc., Buffalo, was announced recently by John K. Farrar, acting sales manager. The territory covered by Kreiling is Kansas and western Missouri.

For the past seven years Mr. Kreiling has operated as a sales engineer in the Kansas City area. In addition to Mor-Sun, he represents Despatch Oven Co., Minneapolis, Minn., and American Air Filter Co., Louisville, Ky.

THATCHER FURNACE CO., Garwood, N.J., has announced the appointment of Joseph Hackett as sales representative in the states of North and South Carolina. Hackett's eighteen years of experience in the heating business will be of great value to Thatcher customers in this area.



Joseph Hackett



Justice Lockwood

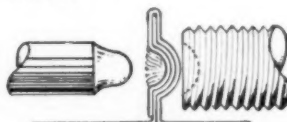
JUSTICE LOCKWOOD, manager of the Buffalo, N. Y. Branch of The American Brass Co., was appointed vice president in charge of sales for the entire company, effective April 1, according to an announcement made by Arthur H. Quigley, American Brass Co. board chairman.

## WHITNEY LEVER PUNCHES

No. 6 Punch



This Tool is especially adapted for Button Punching or for Templet work. Punch will strip where handle cannot be opened to 90 degrees. When used as a regular punch, the capacity is  $\frac{1}{4}$ " hole through 3-16" iron. Stock size  $\frac{1}{8}$ " to 9-32".



These punches are often called Tip Punches, and are used to fasten standing seams without making a hole, by simply indenting the three thicknesses of metal.

W.A.  
**W** HITNEY MFG. CO.  
636 RACE ST. ROCKFORD ILL.

## Save Time...Labor...Material with **BEVERLY** metal cutting **SHEARS**

### throatless SHEARS

Make any cut—straight, irregular, curved. Exclusive design permits turning work any direction while cutting. 4 models—cap to 3' 16".



### Inside SLOTTED

Makes cuts up to 8" inside edge of sheet. Sharp, clean burr-free cuts always assured. Cap 16 ga. High strength aluminum alloy body. H.C.H.C. blades.



### slitting SHEAR

New "SS" Series—easier cutting with compounded linkage. 3 models—cap to 1/2", trimming capacity to 1/2" mild. See your Beverly Distributor. Write for FREE illustrated Bulletin.



**Beverly SHEAR MFG. CO.**

3020 W. 111th STREET • CHICAGO 43, ILLINOIS

## How to promote greater **PER-MAN** productivity!



Well-ventilated working environments contribute to faster, better defense production.

Western Rotary Turbine Ventilators provide constant, round-the-clock exhaust without power. A 2-mph breeze keeps your Western Rotary System in operation. Lifetime guaranteed bearings are both mounted on the same axis... always stay in alignment.

Throat sizes 6" through 48", with the clean, low silhouette progressive industry demands.

Complete, up-to-the-minute information, sizes, capacities, and prices on all Western equipment upon request. In 1952 SWEETS and A. E. C.

In Stock At Your  
Favorite Wholesalers.

"ALWAYS ON THE JOB — NEVER ON THE PAYROLL"

**WESTERN ENGINEERING & MFG. CO.**

1726-28 E. WASHINGTON BLVD., LOS ANGELES 21, CALIF.

try

the  
simpler  
way—

just use



hardened

## MASONRY NAILS

for making fastenings to  
brick, mortar, concrete, etc.



You'll save work, as well as time and money by using P-K\* Hardened Masonry Nails. Just hammer them in—they hold securely, and are easier, quicker, and cheaper to use than expansion bolts, lead anchors and plugs, and similar devices.

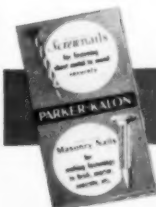
In comparatively soft masonry they can be driven without the necessity of drilling lead holes. For hard masonry, make pilot holes with a P-K Masonry Drill.

First time you try them, you'll agree that P-K Masonry Nails are the job-speeders you've been looking for. Available everywhere through accredited Distributors. Remember... IF IT'S P-K, IT'S O.K.

## PARKER-KALON® FASTENING DEVICES

Makers of the Original Self-tapping Screws

Write for this folder



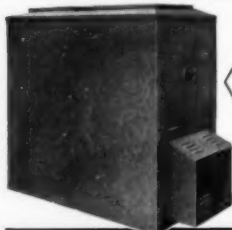
Gives sizes, punch information, full instructions for use. Tells you the many ways Masonry Nails will help you save time and money. Parker-Kalon Corporation, 200 Varick Street, New York 14, N. Y.

\*TRADE MARKS REG. U.S. PAT. OFF.

## A FULL RANGE OF SIZES

for All Small Homes  
**Majestic**  
UTILITY FURNACES

Upflow-Downflow Units  
Up to 90,000 BTU output  
Two sizes—Eight models  
Completely factory assembled  
Space saving! 22" and 26" square  
Oil or gas burners interchangeable



**Oil or Gas**

Horizontal Flow Units  
Two Sizes—Four models  
Up to 125,000 BTU output  
Give maximum use of fuel  
Compact! For low basements  
Drawer-type, convertible burners

Complete Booklets Available  
Write for details today!

**The Majestic Company, Inc.**  
394 Erie Street Huntington, Indiana  
*Heating Specialists since 1907*

**ONLY A FEW CHOICE  
EXCLUSIVE TERRITORIES  
STILL OPEN!**



AGA  
Listed

DEALERS—  
MANUFACTURERS'  
AGENTS: Write for  
Information on this

**FAST SELLING LINE OF**  
*Reinhard* **GAS CONVERSION  
BURNERS!**

The only gas conversion burner with the exclusive "AIR-LOCK" principle. Never a burner head or baffle plate replaced due to burning out. A complete line of domestic, industrial and commercial gas conversion burners. Write today for complete information.

MANUFACTURED SINCE 1932

**Laharco Industries**

Lyndale and 2nd Ave., N. Minneapolis 5, Minn.  
Better Burners Are Made—Laharco Make Them

Lockwood's headquarters will be at the main office in Waterbury. His successor has not been named as yet, and no further changes are involved in the company's sales organization at this time. The post of vice president in charge of sales has been vacant since the retirement of Elton S. Wayland on January 1, 1950.

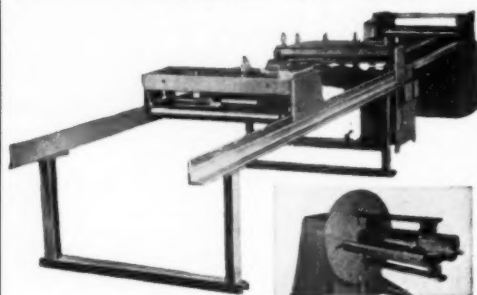
J. V. O'CONNOR has been named chief of the brass mill section of the N.P.A.'s copper division, according to a recent announcement from Washington. He succeeds David T. Marvel, recently named assistant deputy administrator of N.P.A.'s Metals and Minerals Bureau.

Mr. O'Connor has been on leave of absence from C. G. Hussey & Co., brass and copper rolling mills, since July 1951. He has been with the Hussey organization since 1935, where he was assistant director of sales.

GENE BROWN, active in the heating and air conditioning industry for the past twenty years, has announced that he is returning to Texas to devote his full time to operation of a sales agency. He intends to carry on the same type of intensive promotion by which he recently gained national recognition for building a new warm air furnace line into a major industry factor in a few years time.

He will cover the state of Texas personally, and will supervise sales in the balance of the South and Southwest through associates. Equipment handled will comprise heating and air conditioning and related lines. Associates and manufacturers interested in representation, should write him at 5643 Dyer St., Dallas 6, Texas.

## Modern De-Coiling Equipment by "DAHLSTROM"



Coiled materials are fed, straightened, measured, cut into sheets, and ejected on a continuous basis automatically. Line shown handles to 36" widths in 20 ga. mild steel—coil weights to 6000#. OTHER CAPACITIES AVAILABLE.

Inset shows self centering coil reel which is part of the complete line—Unit has infinitely variable speed drive between 35 and 100 fpm.

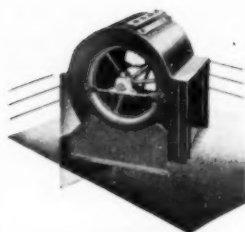
**PURCHASE ALL YOUR MATERIALS IN COILED FORM AND  
ENJOY THE FOLLOWING ADVANTAGES:**

- Lower material inventories
- Less Scrap (sheets can be cut to exact lengths needed)
- Material handling savings
- Tons more storage in the same space

**DAHLSTROM MACHINE WORKS, INC.**

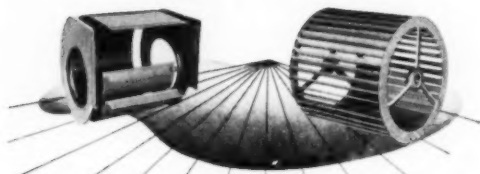
4974 N. Elston Ave.

Chicago 30, Ill.



## MASSACHUSETTS AIR CONDITIONING FURNACE BLOWERS

Designed for manufacturers  
of warm air furnaces and  
air conditioning equipment.  
Wheel Sizes 7 1/2" to 27"



Housing sides, cutoff  
plate and scroll sheet.  
Heavy gauge steel  
stampings.

End spider suspension  
type wheel assembly.

Write for catalog

Manufacturers of centrifugal blowers for 36 years

MASSACHUSETTS BLOWER DIVISION

**The BISHOP & BABCOCK Mfg. Co.**

4701 HAMILTON AVENUE

CLEVELAND 14, OHIO



## Our ELBOWS HAVE PERFECT FORM

CONDUCTOR PIPE ELBOWS,  
SHOES

- ★ ALL SIZES
- ★ ALL METALS
- ★ ALL ANGLES
- ★ ALL GAUGES

SEE YOUR JOBBER

**THE CINCINNATI  
ELBOW CO.**

2021 EASTERN AVE.  
CINCINNATI 2, OHIO



## Steel BENDING BRAKES

One-man operation



CHICAGO hand-operated bending brakes are avail-  
able in a variety of standard sizes ranging from 3  
to 12 feet in capacities up to 12-gauge sheet metal.

also

CHICAGO Portable Hand Brakes

CHICAGO Box and Pan Brakes

Full Particulars upon Request

**DREIS & KRUMP**  
MANUFACTURING COMPANY

7404 S. Loomis Blvd., Chicago 34, Illinois



STEEL BENDING BRACKES  
HAND AND PORTABLE  
BOX AND PAN



for OIL • GAS  
FREON • BUTANE  
STEAM • WATER

## A positive seal

Pipetite provides a positive seal for joints regardless of the type of fluid or gas being used. It is the dependable joint compound that makes good workmanship and assures user satisfaction. To be absolutely sure of "no leaks" use Pipetite. If your supplier does not have it . . . write direct.



**LAKE CHEMICAL CO.**  
3050 W. W. Carroll, Chicago 12, Ill.

# NOW

*Exclusive . . .*  
sales territories



**BOOMER** *cast iron*  
*and*  
**STARK** *steel*  
**FURNACES**

Units for coal, gas or oil —  
forced air or gravity  
WRITE FOR DETAILS

**THE HESS-SNYDER CO.**

MASSILLON, OHIO

MANUFACTURERS OF QUALITY FURNACES SINCE 1880

THE FIELD CONTROL Div., H. D. Conkey & Co., Mendota, Ill., has appointed a new manufacturer's representative to represent their line in North Dakota, Minnesota and part of Wisconsin. The Field organization will be represented by Sales Engineers, headed by Bruce McLouth, in Minneapolis, Minn.

Sales Engineers will represent the complete Field line, including the new "MG" gas control recently introduced by Field Control Division.



Bruce McLouth



Earl E. Ensminger

EARL E. ENSMINGER has been appointed treasurer and member of the board of directors of the Rybolt Heater Co., Ashland, Ohio. This is in line with a new program approved by the board of directors at its last annual meeting.

Prior to his appointment, Ensminger was commercial credit analyst at the Cleveland Trust Co. and previous to this he was chief accountant at the Lakeside Works, Jones and Laughlin Steel Co., Cleveland.



## "Bett-Marr cuts 550 more 16C ells an hour"

*Says a Minneapolis sheet metal boss. "In fact, we now cut all ductwork pieces 6 to 12 times faster than by hand with the BETT-MARR saw."*

BETT-MARR cuts 50 to 70 stacked galvanized sheets at speeds up to 15 inches per minute. This 14-inch ball-bearing hand saw cuts metals, plastics, wood, iron and steel castings and forgings.

- Smooth, powerful chain drive with blade speeds quickly adaptable from 125 FPM to 220 FPM.

- Positive blade control. Case hardened guides with carbide back-up bearing assure cutting accuracy.

PRECISION  
BUILT — Yet it  
costs little more  
than a home-  
workshop power  
saw.

GET THE AMAZING FACTS. Learn how you can cut production costs with a BETT-MARR sheet metal saw. Write BETT-MARR Mfg. Co. today. (Equipment dealers — write for information on available territories.)

**BETT-MARR MFG. CO. HOPKINS, MINNESOTA**



## PIPE AND FITTINGS GUARANTEED QUALITY!

All Ajax fittings are made of high-grade, full gauge sheets . . . no seconds used! Quality is fully guaranteed. Your order, large or small, receives prompt, personal attention.



Scientifically designed to reduce air friction

For help on your heating problems our engineering department is at your service. Contact us . . . we'll gladly work with you.

Double seamed for strength and air-tight construction



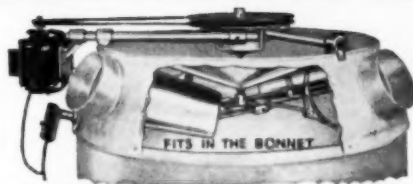
Write for catalog of Furnace Fittings.

**Ajax Furnace Fitting Co.**

Division of

The Cincinnati Sheet Metal & Roofing Co.  
216-20 E. FRONT ST. CINCINNATI, OHIO

## Convert Gravity Furnaces With A CIRCULATAIRE Bonnet Blower



**CIRCULATAIRE** ELIMINATES COLD ROOMS,  
BALANCES HEAT DISTRIBUTION, SAVES FUEL

CIRCULATAIRE solves the problem of "hard to heat" rooms, boosts warm air quickly through all the heating pipes. CIRCULATAIRE is easily and quickly installed without removing the bonnet. Packaged unit includes motor and fan control. No new sheet metal work required, no changing of cold or warm air pipes, no baffles to be built. The CIRCULATAIRE is rigid, quiet and efficient in operation.

**NOW READY** — New CIRCULATAIRE Sales Aids add effectiveness to selling interview, conserves valuable selling time and increases sales.

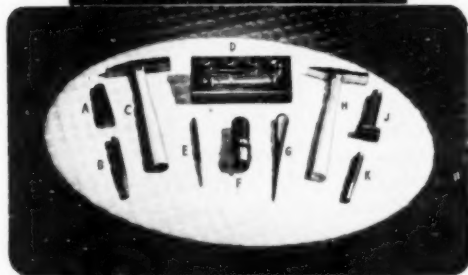
A COMPLETELY PACKAGED UNIT  
Nothing for the dealer to furnish except limited amount of labor.



GET THE FACTS TODAY! WRITE...

**CIRCULATAIRE** DIVISION OF CORLETT-TURNER CO.  
1001 S. KOSTNER AVE., CHICAGO 74.

## WHITNEY METAL TOOL COMPANY 41 YEARS EXPERIENCE



### WHITNEY-JENSEN SMALL TOOLS

- A—Rivet Sets, Sizes 00 to 8
- B—Round Handle Punches No. 00
- C—Square Face Setting Hammers, Sizes 1 to 4
- D—Changeable Hollow Handle Punches
- E—Whitmetal Pin, Length 6-3/4"
- F—One-Piece Hollow Punches No. 4
- G—A-1 Scratch Awl, Length 9"
- H—Beveled Riveting Hammers
- J—Grooving Tools, Sizes 00 to 8
- K—Hand-Forming Rivet Sets

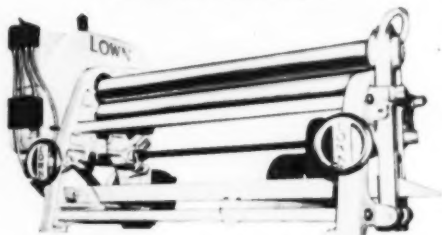
WHITNEY METAL TOOL COMPANY  
91 FORBES STREET, ROCKFORD, ILLINOIS

*Throughout the  
AIR CONDITIONING  
Industry—*

**AEROFIN FIN-TYPE  
HEAT-TRANSFER UNITS**  
do the job Better,  
Faster, Cheaper

**AEROFIN CORPORATION**  
410 South Geddes St., Syracuse 1, N. Y.

## LOWN SLIP ROLL FORMING MACHINES



Model 8-774 Lown Slip Roll Former With Power Adjustment on Rear Roll

A new improved, modern design, heavy duty machine engineered for durability, strength and service.

- Initial Pinch Type-Power Driven
- Top Roll 7" Diameter-Lower Rolls 6 1/2"
- Capacity, Model 8-774, 1/4" Mild Steel 6' wide.
- Available in longer or shorter lengths
- Oilite Bearings, Alcomite Lubrication
- Roll Position Indicators
- Power Adjustment on Rear Roll & Air Cylinder For Operation of Drop Arm, if desired.
- Fast sturdy and easy to operate
- Prompt Deliveries
- Other Machines with 2" to 10" dia. Rolls also Available

Dealers in Principal Cities

Write for Bulletin

**San Angelo Foundry & Machine Company**

SAN ANGELO, TEXAS

1000 EAST UPTON

REGISTERS BY

# ROCK ISLAND

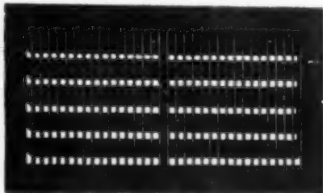
... AND THE JOB IS COMPLETE!



FLOOR REGISTERS

That's the truth, too!

Rock Island registers add the final touch to a perfect installation. They'll harmonize with any architectural arrangement whether in a small family home or a large building. Try the floor register on gravity installations or the forced air register . . . either will prove Rock Island's superiority. Write us for details.



FORCED AIR REGISTERS DESIGNED FOR SIDE-WALL AND BASEBOARD INSTALLATIONS

**ROCK ISLAND REGISTER CO.**

2435 Fifth Avenue

Rock Island, Illinois

The board of directors at this meeting approved an extensive modernization program which is being inaugurated immediately.

THE APPOINTMENT of W. L. Snelts as manager of sales planning, General Electric Co.'s home heating and cooling department, was announced at Bloomfield, N. J., by S. J. Levine, general manager of the department.

In his new assignment, Snelts will be responsible for all programs concerned with selling home heating and cooling equipment including the development of advertising and sales promotion programs, sales training programs, and special customer sales plans.

Snelts was formerly supervisor of advertising and sales promotion for automatic heating and residential year round air conditioning equipment for the air conditioning division. He came to General Electric in 1950, from the Williams Oil-O-Matic Heating Division of the Eureka-Williams Corp., Bloomington, Ill. where he was advertising and sales promotion manager.

BARBER-COLMAN Co., Rockford, Ill., will purchase the principal assets of Wheelco Instruments Co., Chicago. Wheelco products consist of indicating, recording, and controlling instruments, and combustion safeguards.

Present plans are to continue current operations in Chicago until manufacturing facilities can be gradually transferred to Rockford in a manner that will result in comparatively little interruption in shipments. No changes are contemplated in Wheelco's national sales and service organization.

## FITTINGS FOR YOU

Nope, we don't make fittings to please ourselves or to please your customers . . . we make 'em to please YOU! Our years of experience have proved beyond any doubt that the quickest way to attain a good, solid reputation is to keep on making the best product ALL the time. That way we know you'll keep coming back to us for fittings that result in neater and faster installations. . . and that will help you reduce your labor costs.

If you're not a Youngstown customer now, then let us show you why it will be to your advantage to always use Youngstown. . . the fittings that really FIT!

**YOUNGSTOWN FURNACE CO.**

627 Marshall Street

Youngstown, Ohio



Milwaukee Arena, Eschweiler & Eschweiler, Architects, Inc., H. York, Hig. & Vig. Engr. Downey Heating Co., Hig. & Vig. Contrs.

## Fans for Fans...

...breezes for rooters. Nineteen Bayley centrifugals provide comfortable atmosphere for crowds attending sports, shows, conventions and other attractions staged in Milwaukee's beautiful Arena.

Dependable performance is particularly important for ventilating public places. That's one reason for choosing Bayleys. Sound design, fine workmanship and materials, complete type and size range, over 50 years manufacturing experience, back the choice.

Why not call or write us about your requirements, and make your next job a Bayley one?



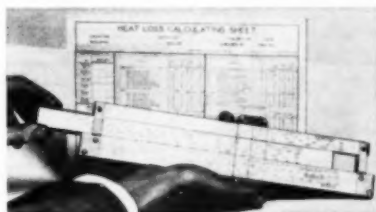
**AIR HANDLING EQUIPMENT**  
Performs better, — longer

### BAYLEY BLOWER COMPANY

6602 W. Burnham St. Milwaukee 14, Wis.

## HEAT LOSS CALCULATOR

Accurate, inexpensive heat loss estimates are readily obtainable with the new "Climatemaker" heat loss calculator announced by its manufacturer, and designed for use of dealers in residential heating equipment. The Climatemaker eliminates the drudgery, guessing and expense of heat loss calculating with complicated reference books and charts. It saves 11 steps in figuring heat loss. It



estimates btu loss for each room, plus total loss from house; CFM requirements for forced warm air, gravity 200' and gravity 175' heating units; square feet of steam or hot water radiation required; pipe area and other details for systems and for each floor; line loss; coal, oil or gas furnace sizes and other details. For full details write Climatemaker Heat Loss Calculator Co., Dept. 106, Box 378, Bloomington, Ill.

## FOR Quality INSTALLATIONS

**Boston Chrome Steel "HANG-DOWN" BAFFLE**

**APTHROP True Alignment OIL BURNER NOZZLE**

**Instant-Glo COMBUSTION CHAMBER**

**Clearview OIL TANK GAUGE**

**Meal NOZZLE EXTRACTOR**

**BOSMACO APTHROP NOZZLE KIT**

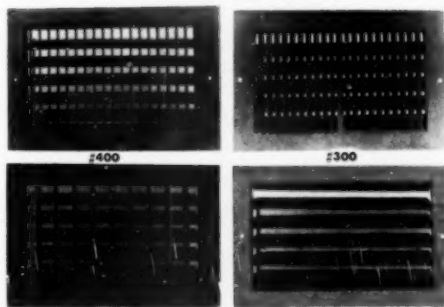
**The Boston Standard DRAFT CONTROL**

WRITE FOR COMPLETE INFORMATION

**BOSTON MACHINE WORKS COMPANY**

Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

## See Your Jobber



Many thousands of the above types used in housing projects. Lowest in price, more free area.

The Air-O-Vane ceiling diffuser. Also made in type D-E with positive shut-off control (Patents Pending) made in all sizes.



Greatest in free area of any ceiling diffuser and lowest in cost. Write for catalogue or see your jobber.

**AIR-O-VANE CEILING DIFFUSER**  
WRITE FOR CATALOGUE TO —

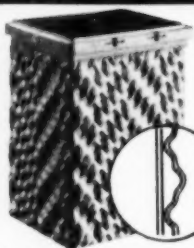


**KRUEGER**  
AIR CONDITIONING COMPANY

19 EAST RILLITO ST. TUCSON, ARIZONA

# CHECK THIS LIST

OF ALL-IMPORTANT PROPERTIES  
Essential to Your Product:



- ✓ SURFACE PROTECTION
- ✓ HIGH IMPACT STRENGTH
- ✓ FLEXURAL RIGIDITY
- ✓ MINIMUM STRATEGIC MATERIALS



**Rigidized**

**Metals**

Pattern ACC-4, welded to plain sheet

Products that must withstand rugged treatment, whether in industry or in combat — such as the electronic case illustrated above — need to be fabricated from a durable, high strength material. Three-dimensional, design-strengthened, textured RIGIDIZED METALS offer you all the above properties in one metal — plus attractive appearance and light weight. A wide variety of standard pattern designs are available in all ferrous and non-ferrous metals — solid or perforated — sheet or strip for increased product efficiency.



WRITE on your company letterhead for a copy of the RIGIDIZED METALS CONSERVATION HANDBOOK — today.

U.S. & Foreign Patents

**Rigidized Metals Corporation**

6995 OHIO STREET

BUFFALO 3, N. Y.

Offices in Principal Cities in the U.S. and Canada



CABLE ADDRESS: "RIGIDIZED"

THE HEATING DEPARTMENT of Dravo Corp., Pittsburgh, announces the opening of a new office in St. Louis and the appointment of Fred W. Schulte as sales engineer for this office. Schulte will handle the sales of heaters and crane cab coolers.



Fred W. Schulte



Lyle L. Groff

RYBOLT HEATER CO., Ashland, Ohio, has appointed Lyle L. Groff as sales manager of its furnace division. Prior to joining Rybolt he was associated with General Motors Corp., and more recently with the Norge Heating Division, Borg-Warner Corp., as national service manager and later as southwest regional sales manager.

In his new capacity, Groff will direct the company's sales program for 1952 which will involve an extensive modernization program and the addition of both a horizontal and counterflow furnace unit to the present line. PERFECTION STOVE CO., Cleveland, announces the addition of three salesmen to its Chicago district staff. They are Elmer L. Schultz, H. Stewart Goad, and Theodore D. Fraser.



**HOME AIR CONDITIONER**

**TUNED TO SUMMER Profits!**

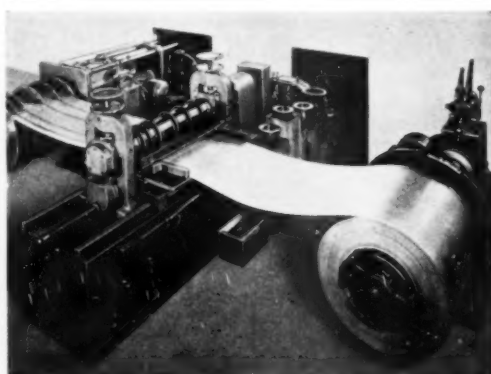
Here's your leader for summer sales and extra profits! Lipman Home Air Conditioner is a compact unit that fits into attic, utility room, or basement. Air conditions the *entire* home when installed with forced air heating systems. Price is low!



**Yates-American, Beloit, Wis.**  
Gentlemen: I am interested in making money selling ☐ Air Conditioning, ☐ Ice Tip Machines, ☐ Condensing Units. Send details.  
Name \_\_\_\_\_ Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

**MAIL COUPON Today!**

**Yates-American**  
BELGIE, WISCONSIN



"... we're looking for slitting business, too!"

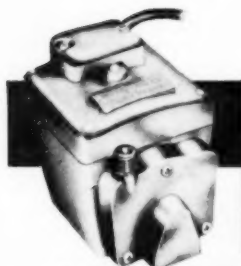
Complete equipment for precision slitting and recoiling; also decoiling, roller leveling and cutting to lengths. METALS — 14 gauge or lighter — any width up to 36".

Write us for details... prompt attention is guaranteed.

**"Made-Rite" Co., Inc.**

Manufacturers & Suppliers  
Furnaces — Pipe and Fittings

10th and Monroe St. Newport, Ky.



## LITTLE GIANT IN NAME GIGANTIC IN FACT

The Little Giant Vaporiser Pump is the original hermetically sealed re-circulating pump. It is built of quality materials to give years of trouble-free service.

### COMMON USES

1. Evaporative coolers
2. Condensate removers for refrigerated cooling
3. Sump Pumps
4. Milk Coolers
5. Oil Coolant Pumps
6. Circulating pumps for cold drink dispensers
7. Aeration of minnow tanks
8. Advertising displays
9. Yard fountains



**Little Giant  
Vaporizer Co., Inc.**  
5101 CLASSEN BLVD OKLAHOMA CITY, OKLA.



## BUILT For BETTER CLEANING

the GRAND RAPIDS  
deluxe FURNACE CLEANER

Model of the Doyle Vac-It

Built by men who understand the problems of furnace cleaning, the Grand Rapids Furnace Cleaner has been developed into a highly serviceable unit meeting all the requirements for faster, easier and more profitable cleaning:

DURABLE—COMPACT CONSTRUCTION • LIGHTWEIGHT ALUMINUM HEAD ASSEMBLY • HIGH POWERED MOTOR • 9" DIAMETER ROTARY FAN • LARGE CAPACITY HEAVY DUTY STEEL TANK • FLEXIBLE RUBBER CLEANING HOSE WITH 2" INSIDE DIAMETER • EFFICIENT OUTSIDE FILTER BAG • FREE ROLLING SWIVEL-TYPE CASTER WHEELS • ENGINEERED FURNACE CLEANING ATTACHMENTS.

Write today for complete information

**Doyle VACUUM CLEANER CO.**

227 STEVENS ST., S.W.

GRAND RAPIDS 7, MICH.

AMERICAN ARTISAN, MAY, 1952



## "BABY SAFE" Hammel Circulaire

### WALL HEATERS

**PARENTS PRAISE Circulaire** for "Baby Safe" surface temperatures . . . cold air drawn off floors . . . quick warm rooms . . . baked enamel beauty finish . . . always dependable performance.

**DEALERS PRAISE Circulaire** for easy installation . . . lower stack temperatures, giving cool walls with standard venting practice . . . extra rigid construction . . . minimum servicing.

**HAMMEL Circulaires** come in 7 sizes, from 11,500 to 50,000 BTU . . . every size fully vented, manual or automatic control, AGA approved for natural, manufactured or LP gas. All install between 16" center studs in either 4" or 6" walls.

FOR MORE PROFIT handle "Baby Safe" CIRCULAIRE.



WRITE FOR DETAILS

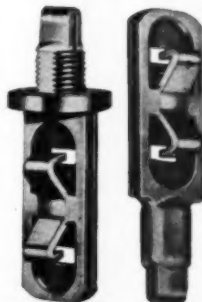
## STOP These 3 MAJOR NOISE MAKERS IN SYSTEMS YOU INSTALL

- WEAK RIVETS
- LOOSE PARTS
- RATTLY DAMPERS



## E-Z-ON DAMPER REGULATORS

Punch Their Own Holes . . .  
Rivet Themselves at a  
Hammer's Blow . . .  
Offer No Air Flow  
Resistance . . .



You can practically eliminate noise tendency in forced air heating, ventilating, or air-conditioning systems by using E-Z-ON Damper Controls.

Order from jobber.

Stocked in Canada by  
Thermidair Corporation Ltd.  
90 Sherbourne St.,  
Toronto 10, Ont.

**M.A. GERETT CORP.**

724 WEST WINNEBAGO STREET, MILWAUKEE 5, WISCONSIN



## TEAM 'EM UP FOR MORE SALES!



Sell Him A  
**Majestic**  
INDOOR INCINERATOR  
When He Buys  
A New Furnace

**H**ERE'S in a buying mood when he selects a new furnace, so "keep the ball rolling"—sell him a Majestic Indoor Incinerator at the same time! If Mr. Buyer purchases an automatically fired furnace, explain to him that burning refuse in such a unit is now impossible. Then tell him how this indoor incinerator can do a much better job, burning all waste paper, trash and garbage right in his basement. It's a convenience for his wife to have a Majestic Indoor Incinerator handy—eliminating trips to the outdoor garbage can and trash burner in all kinds of weather. Here's an item that is completely safe—just fill it, light it and leave it. Unique down-draft does the rest! Connects to furnace flue. Duotone finish. 24" diameter; 32" high (other sizes available). Priced right for quick sales! Get the facts—write today.

The **Majestic Company**  
110-A ERIE ST. • HUNTINGTON, INDIANA  
Nationally Known and Advertised for Over 40 Years!



**Midco Register Corp.**  
1059 Grand Ave.  
St. Paul, Minn.



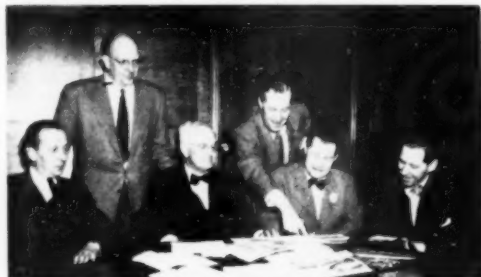
**Registers — Grilles — Floor Faces —  
Floor Registers — Gravity Registers.**  
The complete quality line for all winter and summer air conditioning.

Send catalog to .....

Address .....  
City ..... Zone ..... State .....

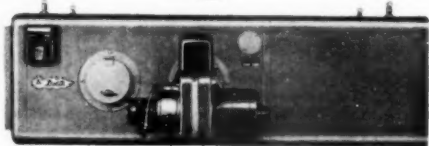
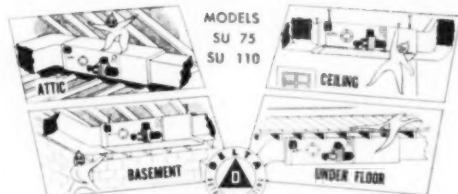
Schultz will travel the Milwaukee, Wis., area; Fraser will work in northwest Indiana and southwest Michigan and Goad will represent the company in northern Illinois.

All three men are veterans of World War II and all have had a number of years of sales experience. Schultz spent five years with the Eldon Co., Milwaukee manufacturers' agents, and two years with Purdy Products, Inc., Milwaukee, as sales manager. Fraser obtained his first appliance sales experience with the P. Jones Appliance Co., Muskogee, Okla. Later, he was associated with the Chamber Illinois Corp. Goad spent three years after the war with a Chicago appliance distributor.



Plans to manufacture Eureka Williams Oil-O-Matic burners in Sweden are perfected at meeting in Bloomington, Ill., by officials of A.B. Ljungmans Verkstader, Malmo, and Eureka Williams Corp. Standing (L to R.) are M. P. Langdoc, Williams Division export sales manager, and C. S. Stackpole, Williams Division vice president. Seated (L to R.) are Capt. Filip Sloor, of Stockholm; H. W. Burritt, Eureka Williams president, and Erik Eklund and Sten Almborg, president and works manager, respectively, of Ljungmans Verkstader.

## SUSPENDED - SPECIAL APPLICATION OIL FIRED - FORCED AIR FURNACE by DELTA HEATING CORPORATION



FACTORY ASSEMBLED — READY FOR INSTALLATION  
**SUSPENDED — MODELS SU-75, SU-110**

Excellent for special-purpose heating applications—attic, low-basement, ceiling and underneath the floor. Two sizes—75,000 and 110,000 BTU/HR. Factory assembled with hanger posts or base flange-stands. Ask your wholesaler for DELTA'S LOW PRICE or write for complete details.

**DELTA HEATING CORPORATION**

TRENTON 8, NEW JERSEY

## HomEase is the Burner that offers you the Exclusive

**FLAME-IZER** . . . high CO<sub>2</sub> flame-fitting to the individual fire-box, quickly, easily!

**FIRE-STAT** . . . more starting air—thus less sooting and smoking on cold starts!

**MORE SALES..  
GREATER PROFITS**  
*easily!*

VARIOUS MODELS:  
.5 to 15 gph

HomEase has an important place in thousands of homes . . . has thousands of satisfied owners . . . it should have an equally important place with you. Get the all-important facts, Now

**HomEase Products  
Company**

PATERSON 3, NEW JERSEY



## KENT

**Double  
Suction**

**FURNACE  
CLEANER**

Designed for profits by one of America's foremost manufacturers of suction cleaning equipment!

✓ Check KENT for PERFORMANCE!

Powerful, efficient double-suction . . . no dust passes through fans . . . no outside dustbag!

✓ Check KENT for CONSTRUCTION!

Low center of gravity, less chance of tipping! Separates into 2 parts for easy carrying! Live outlet at switch for extension light!

✓ Check KENT for ECONOMY!

It's built to last . . . minimum time out for repairs . . . maximum service under difficult conditions!

Full information upon request



CLEAN WITH **KENT** EQUIPMENT

The KENT Company, Inc. • 435 Canal St. • Rome, N. Y.



MODEL 1238  
16 IN. THROAT  
12 GAUGE  
CAPACITY

CIRCLE  
CUTTING  
ATTACHMENT  
Included in  
STANDARD  
EQUIPMENT  
with this  
machine

for **BETTER  
PRODUCTION and  
MAINTENANCE**  
at Lower Cost

A proved time-saver in any sized shop. Libert's flexibility gives you a wider variety of work—clean shearing of flat or formed sheet metal . . . straight or irregular shapes . . . inside or outside cuts. Libert simplicity means that even unskilled labor soon does accurate work, lots of it and fast! Write for Bulletin.

Made in sizes up to 60 in. throat, 10 gauge capacity

**LIBERT MACHINE CO., GREEN BAY, WIS.**

**Libert Hi-Speed SHEAR**

## LUSTRIK<sup>®</sup> ALUMILITED SHEETS

Processed metal for  
a streamlined effect  
in sheet metal work

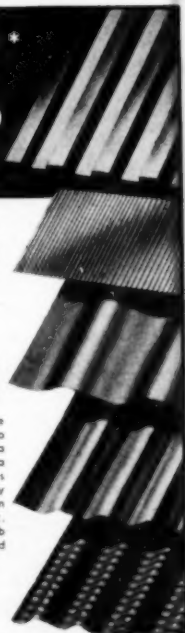
- SIGNS & LETTERS
- ENTRANCES
- DOOR FRAMES
- DOOR COVERINGS
- FACIAS
- SOFFITS
- SPANDRELS
- BULKHEADS

Lustrik<sup>®</sup> Alumilited aluminum sheets have the stand-out features that appeal to every "sheet metal man." Here's a treated sheet that can be formed on a brake and cut with ease. Large panels save time — quickly and inexpensively erected. Ideal for the modern effect on stores, factories, service stations, etc. Available in flat, square streamlined, rib fluted, corrugated and cross crimped corrugated.

+ Reg. T.M.

WRITE for free sample  
kit and information

**LUSTRIK<sup>®</sup>** INCORPORATED  
3225 FRANKFORD AVE., PHILA. 34, PA.



**Copper - Brass - Bronze  
Perforated  
TO YOUR REQUIREMENTS**

**PERFORATED METALS  
FOR ALL INDUSTRIAL USES  
ARCHITECTURAL GRILLES  
SEND FOR CATALOG #35  
DIAMOND MFG. CO.  
BOX 34 WYOMING, PA.**

## BARBER BURNERS

*For All Gas Appliances*



We have the facilities and experience for designing and building the exact type and size of burner unit to fit any gas appliance, using natural, manufactured, butane or bottled gas. We cooperate with any reliable manufacturer in the necessary development and laboratory testing, and in acting as continuous source of supply for his burner units.

*Latest Catalog on request*



**The Barber Gas Burner Co.**  
3708 Superior Ave., Cleveland, Ohio



**•BB•**

### Pipe and Gutter Tool

Used for flattening lip in gutter head for easy entrance.

Quickly enlarges or reduces size of head for slipping heads together.

In the erection of pipe and gutter, no other tool can take the place of this handy little item. Especially adapted for crimping conductor pipe after cutting on the job. Also equally effective for rounding out distorted heads.

**SOLD THRU LEADING JOBBERS  
EVERYWHERE**

*Manufactured by*

**BERGER BROS. COMPANY**

229-237 Arch Street

PHILADELPHIA 6, PA.

How you can speed up your Work  
—without an 8' or 10' Square Shear

**ALMAR EASY SLITTER**  
FOR USE WITH BRAKE OR BENCH

The Rotary action of cutters produces a neat, accurate clean edge.

**PRICE—COMPLETE  
Almar Easy Slitter**  
with cutting head & track

6' Brake Type	— \$75.00
8' Bench Type	— \$85.00
10' Brake Type	— \$85.00
10' Bench Type	— \$95.00

F O B —Chicago, Ill.

**WARD MACHINERY CO.**  
564 W. WASHINGTON BLVD. CHICAGO 6, ILLINOIS

L. R. Foote has recently been promoted to national sales representative for industrial combustion equipment designed and manufactured by Bryant Heater Division, Affiliated Gas Equipment, Inc. This announcement was issued from Bryant's Cleveland headquarters by Director of Sales, W. H. Wise.

Larry Foote previously held the position of eastern sales representative since joining the company in January, 1946, and has been connected with the gas industry since 1930. His experience with utility and industrial operations forms a sound background for the sale and application of industrial equipment.



L. R. Foote



Ernest C. Brinkman

L. J. MUELLER FURNACE Co. recently announced the appointment of Ernest C. Brinkman as a sales representative. Brinkman, who has a well rounded background in the heating business, will work out of the St. Louis territory. A graduate of Washington University in St. Louis with a degree in Electrical Engineering, he spent two years with a heating control manufacturer as a sales

### MILTON SHEET METAL MACHINERY SPECIALISTS

**STOCK DELIVERY ON PEXTO, CHICAGO  
BRAKES, DIACOR, ROUSSELLE PRESSES, KIDDER,  
WHITNEY, ROTEX PUNCHES, REX WELDERS  
WE CARRY A COMPLETE STOCK OF NEW &  
USED HAND & POWER MACHINERY.**

**WE STOCK PUNCHES & DIES & ADAPTERS FOR  
ALL PRESSES & BRAKES, SHEAR BLADES & SPOT  
WELDER-TIPS & HAND TOOLS.**

### MILTON EQUIPMENT COMPANY

N.E. COR. 4th & Race St.

Phila. 6, Pa.

WAlnut 2-1734

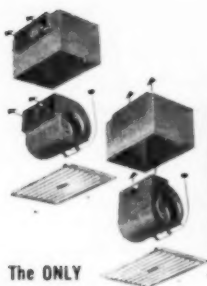
## BRAUER has

**REPAIR PARTS for all FURNACES  
BOILERS, STOVES • Guaranteed to FIT**

## A. G. BRAUER Supply Co.

2100 Washington Ave.

St. Louis, Mo.



## The Best IN KITCHEN VENTILATION

**INTERCHANGEABLE  
DISCHARGE  
EXCLUSIVE IN  
TRADE-WIND  
VENTILATORS**

The ONLY  
ventilator  
that gives you

- Centrifugal Blowers
- Isolated Motor
- Druggless Grille
- Easier Installation
- Interchangeable  
Horizontal and  
Vertical Discharge
- Five-year Guarantee

You can always  
count on **TRADE-WIND**  
for performance,  
quality and convenience.

PRICE OFFERS AN  
INDUCEMENT BUT QUALITY  
OFFERS A REASON

On the job interchangeability of the  
discharge opening on **TRADE-WIND**  
ventilators provides 3 outstanding advan-  
tages. This is a patented **TRADE-WIND**  
feature which eliminates all extra parts.

① The unit can be placed in the  
best location irrespective of direction of dis-  
charge.

② The installer arranges the direc-  
tion of discharge on the job in a matter of  
minutes. Saves time for him.

③ You only have to specify the  
model... and the dealer can supply it  
without doubling up his stock to be sure  
he has the proper discharge arrangement.



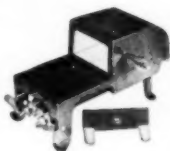
5717 So. Main St., Los Angeles 37, Calif.

## MORE HEAT FOR YOUR DOLLAR WITH JOHNSON BENCH SOLDERING FURNACES

**1800°F. without forced air blast.**

### No. 101 Bench Furnace

The most efficient, powerful and  
economical bench furnace made  
for heating soldering coppers up  
to 12 lbs. per pair. Also used for  
heat treating, case hardening, and  
annealing carbon steels. Two  
burners. Firebox  $3\frac{3}{4} \times 4\frac{1}{2} \times 5\frac{1}{2}$ .  
Complete with work rest block  
and baffle plate. \$18.80 F.O.B.  
factory.



### No. 118 Combination Bench Furnace

For heating largest soldering cop-  
pers, stenciling irons, branding  
irons, etc.; heat treating carbon  
steels, and soft metal melting. Lid  
on hood is removable for inserting  
22 lb. pot for melting lead, tin,  
babbitt, etc. Three burners. Fire-  
box  $6\frac{1}{4} \times 5 \times 6\frac{1}{2}$ . Complete with  
pot. \$35.00 F.O.B. factory.



**WRITE FOR FREE  
LITERATURE**

**JOHNSON GAS APPLIANCE CO.**  
580 E AVENUE N.W. CEDAR RAPIDS, IOWA

## Do it the MELAWAY SPLICE GUTTERS

IN 1/10TH  
THE TIME



## with MELAWAY Couplings

- SAVES TIME • STRONGER JOINTS •
- COSTS CUT IN HALF • QUICK, TIGHT PATCHING
- ONLY ONE TOOL NEEDED • SIMPLE AND
- EASY TO USE • SHORT ENDS USED—NOT WASTED

**MELAWAY CORPORATION**  
BRANDON, WISCONSIN

Telephone 1361



## SUSPENDED OR LAYDOWN AIR CONDITIONING FURNACES



FOR GARAGES • SERVICE STATIONS and BASEMENTLESS  
HOMES.

MADE IN 4 SIZES: 85,000; 142,000; 200,000 and 240,000 B.T.U.

PROMPT DELIVERIES — WRITE FOR FULL DETAILS

**QUIET AUTOMATIC BURNER CORP.**

33-35 BLOOMFIELD AVE. near Broadway  
NEWARK 4, NEW JERSEY

**Kirk-Blum**

**...one piece  
BLOW PIPE ELBOW  
SAVES YOU MONEY**

- HOODES
- BALL JOINTS
- FLOOR SWEEPS
- BLAST GATES
- STAMPED AND ROLLED ANGLE RINGS

Cheaper and stronger than the ordinary pieced elbow, KIRK & BLUM'S One-Piece Elbows are rolled into a tube, then crimped on an exclusive machine to form a super tight, rigid elbow. These and other blow pipe parts, made in production quantities, are superior, cost less than the ordinary kind. Made in light to heavy gauges, from 3-inch to 14-inch diameter. Write for literature and prices.

**THE KIRK & BLUM MANUFACTURING CO.**  
3180 FORRER ST. • CINCINNATI 9, OHIO

**Ball Joints  
Any Size**

**DON'T JUST BAFFLE!  
GET SWIRLING ACTION  
TOO-**

It pays to include a FIRE-SWIRL with every conversion.

Get the facts, clip this to your letter head.



Pat. Applied For

**FIRE-SWIRL** **ZEH COMPANY INC., PASSAIC, N.J.**

**Elgo Ventilating  
Specialties**

**IT'S SOMETHING  
SPECIAL**

The "Elgo" Automatic Shutter, because of its outstanding features, is really something special. It's noted not only for its quick-opening and tight-closing levers but also for its quietness—never any blade flutter. Sizes from 12" to 72"—also rectangular.

Write for Circular and Prices



**"ELGO" TYPE  
AUTOMATIC SHUTTER  
Front View (Open)**

**ELGO SHUTTER & MANUFACTURING CO.**  
2738 W. Warren Detroit 8, Mich.

**Free CATALOG**

## ADAMS

Clean-Out Door

(Cast Iron)

Sizes: 5x7 ins.

to 30x24 ins.



Buy Adams Known Quality

**THE ADAMS COMPANY**

BRIDGE STREET • Established 1863 • DUBUQUE, IOWA

and engineering representative, in Buffalo, New York, and St. Louis.

CONCURRENT WITH a long-range program to expand its line of heating equipment, the Illinois Iron & Bolt Co., Carpentersville, Ill., has purchased the Comfort Equipment Corp., Chicago, according to an announcement by John M. McClintock, manager of the Illinois Iron & Bolt Co., heating division, Chicago.

Under this new arrangement, the firm's line now includes gas, oil, and coal-fired warm air furnaces, gas and oil conversion burners, air-circulating systems, and a complete range of Freeman stokers up to 1200 pounds per hour capacity. With distributorships still available in some markets, an advertising and promotional campaign is being readied to support the company's new coast-to-coast sales drive.

Mr. McClintock also announced the introduction of their new Comfort Air-Circulating Systems for low-cost packaged heating. Described as a pre-engineered warm air heating installation, the units, including assembled furnaces, air circulators, 3½" pipes, fittings, connectors, etc., come compactly packaged to save handling time and work and to simplify on-job assembly.

A. W. CONLEY, president of the Coroa Heater Corp., Cleveland, announces the appointment of T. G. Leonard to vice president. Widely known in the appliance and heating industry, Leonard joined the Coroa sales organization in 1946 after four years of service with the army air forces.

**ALLEN SODER-FLUXES  
FOR STRONGER JOINTS**

For Soldering — Brazing — Welding



You can get a complete line of SODER-FLUXES from Allen for soldering, brazing and welding all metals.

Write us today for Soldering Ideas—FREE

**L. B. ALLEN COMPANY, INC.**  
6702 Bryn Mawr Chicago 31, Ill.

## ORNAMENTS



### STAMPINGS & SPINNINGS

Zinc Ornaments Available From Stock. Copper, brass, bronze, aluminum and stainless steel ornaments made up promptly.

If you don't have catalog K, send for it NOW.

**MILLER & DOING**

89 ADAMS STREET

BROOKLYN, N. Y.



# CLASSIFIED ADVERTISING

**Classified Section:** Rates for classified advertising are 10 cents for each word, including heading and address. One inch \$5.00. Count seven words for keyed address. Minimum \$2.00 for each insertion. Cash must accompany order.

*for sale*

Six Kresky, Model 75, 67,000 BTU oil forced air furnaces, complete with blower-Minneapolis combination switch; controls and filters. Size 24" x 24" X 5". Still in original crate. Wholesale dealer, at cost, \$225.00 each, our price, \$110.00 each f.o.b. Florence, Alabama. Write or call Young-Pittman Co. Inc., Florence, Alabama. Phone 3550.

<sup>11</sup>Exhausters 40 Buffalo Forge No. 22 Arr. No. 4, 6" outlet, 10" wheel, new, sell all or part. Martin Fireproofing Corporation, Box 27, Kenmore 17, New York.

Established retail heating business for sale. Located in Northwestern Pennsylvania. Doing \$150,000 volume annually. Business can be purchased for the price of inventory, approximately \$20,000. Owner wants to devote entire time to wholesale outlet. Address Key No. 888, American Artisan, 6 No. Michigan Ave, Chicago 2, Ill.

For Sale — truck mounted furnace vacuum cleaner. Clarge suction fan, used very little. Contact — Home Heating Co. Oneonta, N. York.

For Sale—Have surplus stock of the following items. Will close out at 25% discount below your current cost. Lennox Prefabricated ducts of all type. Heating, Refrigeration and fittings, Boots, Transitions, Welding Rods, Con-Stoker, Nuts, Bolts and Shields, Tinned Rivets, Miscellaneous Sheet Metal Tools. Address Key 880, American Artisan, 6 No. Michigan Ave., Chicago 2, Ill.

## agents wanted

## WANTED

MANUFACTURER'S REPRESENTATIVES  
EXCLUSIVE TERRITORIES ON  
GRILLES AND REGISTERS  
ADDRESS KEY #858  
AMERICAN ARTISAN, 6 NORTH MICHIGAN AVENUE  
CHICAGO 2, ILLINOIS

**Sales Representatives Wanted**—Michigan, Minnesota, Missouri, Ohio and some other good exclusive territories available. Must be capable of selling service to heating, air conditioning and refrigeration trades. Also to national users of heating and refrigeration equipment. Long established mid-western firm. Repeat orders, commission basis. Very profitable for man able to handle this since it is a service to the trade very much in demand today. Address Key 881, American Artisan, 6 No. Michigan Ave., Chicago 2, Ill.

**MANUFACTURERS, ATTENTION:** Experienced wholesale heating salesman wants lines as manufacturer's agent. Twenty years contact with Detroit and Michigan heating contractors. Promotion and coverage guaranteed. Desire line of oil, gas, coal, forced air furnaces, heating accessories, metal shop machinery, and tools. Address D. M. Kaefer, 5049 E. Grand Boulevard, Detroit 2, Michigan.

**DONATE A PINT OF  
BLOOD TODAY!**

*wanted*

**WANTED:** Shearing any amount — all sizes Galvanized, cold and hot rolled aluminum, Stainless and copper 6" minimum width 36" minimum length, uniform quantities. Gauges from 16 to 30 inclusive.

Write or wire  
Los Angeles Sheet Metal Mfg. Co.  
901-903 East 9th Street, Los Angeles 21, Calif.  
Trinity 4713

the best reason for  
business paper advertising  
today

...is *tomorrow!*

## HOT GALVANIZED STEEL

### Plenty of Hard-to-Get

**ANGLES • FLATS • ROUNDS • SQUARES • BANDS**

**For Instant Shipment!**[illegible]

**All of Foreign Origin — Hot Galvanized in Philadelphia**

Not necessary to charge to your C. M. P. Allotment — No C. M. P. Allotment required.

**POTTS-FARRINGTON CO.**

FORMERLY W. F. POTTS, SONS & CO. INC.

4250 WISSAHICKON AVE., PHILADELPHIA 29

PHONE Baldwin 3-1000

## American Artisan

# SERVICE SECTION

These pages represent an ideal opportunity for manufacturers to get their messages across to readers of a national publication in their field. Whatever you make or sell, you'll find a large, receptive audience, easily reached at a minimum outlay. Rates are only ten dollars per column inch, and one inch is the minimum space accepted. Plan now to move your products quickly and economically with consistent advertisements in this section.

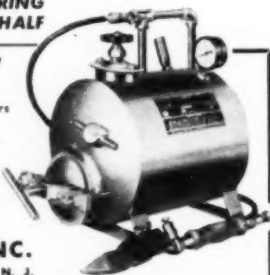
### A DRIVE CLEAT NOTCHER

For notching drive cleats up to 3 in. in width, 22-ga. or lighter. Can be operated by hand or foot or can be easily mounted on the bench or on the job with clamps or bolts and screws.



### CUT SOLDERING COSTS IN HALF

Will give you hot soldering iron in one minute—Solders eight hours for 10c—Right amount of heat—No changing of irons—Make your own fuel from water and carbide.



**REINER & CAMPBELL CO., INC.**

Post Office Box 5035

Newark 5, N. J.

Invest in  
the future!

**BUY A U. S.  
SAVINGS  
BOND**

each payday—  
it will pay well

THESE TOOLS ARE

# Increasing Production!

... More Production Means  
More Profit For You!

### BETT-MARR BANDSAW



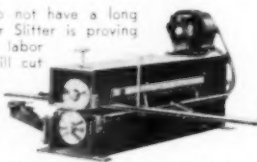
At last we have available an inexpensive metal cutting bandsaw that does all that the sheet metal shop wants to do. Some shops have increased cutting of furnace fittings at least 25 to 1 with this Bett-Marr saw. Cut through as many as 70 sheets of galvanized metal at speeds up to 15' per min.

This powerful saw has all the speed, capacity and durability you need. 20 x 22" table, 13 1/2" throat. Complete with sheet metal clamps and 3/4 HP single-phase motor ready to operate. \$320.00 f.o.b. Chicago, Ill. Prompt delivery.

### WILDER SLITTING SHEAR

For those shops that do not have a long squaring shear, this Wilder Slitter is proving a tremendous time and labor saver. Motor driven, it will cut accurately any sheet metal within its capacity at a speed of 100 ft. per minute. 24" throat depth enables you to cut to center of a 48" sheet.

Two sizes. No. 2024 for 20 ga. and lighter is \$363.00 f.o.b. Chicago, Ill. 1624 for 16 ga. and lighter is \$497.00 f.o.b. Chicago. Both are completely equipped with single phase motors ready to run. Prompt delivery.



### PITTSBURGH LOCKFORMERS



We always have available the popular Lockformer line of Pittsburgh machines in capacities from 24 to 16 gauge. Prompt shipment also on the Cleatformer for drive and S cleats. Catalog on request.

and . . . PEXTO SHEARS, ROLLS AND FOLDERS — WHITNEY PUNCHES — CHICAGO STEEL HAND BRAKES

### BIRDSSELL SPOTWELDERS

This little spotwelder has plenty of capacity for practically all of the average sheet metal shop's work. Water cooled. 220 single phase. Will weld two pieces of 16 ga. Has built-in automatic weld timer. Price is only \$320.00 f.o.b. Chicago and delivery is prompt.

### CENTRAL-WEST MACHINERY CO.

335 S. WESTERN AVE.

CHICAGO 12, ILL.

PHONE: HAYmarket 1-0900

# SERVICE SECTION...

## IT'S HERE AT INTERSTATE

for immediate delivery!

### SHEARS, POWER

NEW 10" 10 Gauge PEXTO  
NEW 72" 16 Gauge PEXTO  
NEW 6" 10 GA. PEXTO GAP  
NEW 72" 14 Gauge PEXTO  
NEW 52" 16 Gauge PEXTO  
12 GA. QUICKWORK STAMPING TRIMMER  
52" 10 GA. NIAGARA GAP  
NEWBOLD CIRCLE. 3/4" Cap., 24" Thr.  
12" 10 GA. BERTSCH GAP  
6" 3/16" STAMCO, B.G.  
3" 10 GA. BERTSCH GAP  
NO. 245 BUFFALO, SLITTING

### ROLLS, POWER

12" 1/2" CAP. NILES, PTH. TYPE, Drop end  
6" LOWN, DROP END, INITIAL TYPE  
5" 14 GA. NIA, INITIAL TYPE, SLIP ROLL  
FORMER, NEW 1945  
36" x 10 GA. PEXTO SLIP ROLL FORMER  
KELSEY-HAYES BAND ROLLER  
7" BERTSCH POWER PINCH  
ROLL, DROP END, 6" DIA. ROLLS

### PRESS BRAKES

8" CINCINNATI, 10" 6" BED, 8" 6" BET.  
NO. 1050 VERSION, M.D.  
18" WHITNEY-JENSEN, 14 GA. CAP. MILD  
STEEL

### IRONWORKERS

SIZE 20 MODEL SCG OKING:  
4 1/2" x 4 1/2" x 3/16"

NO. 1 GRAY NIBBLER, 3/16" Cap.

### CHICAGO STEEL BRAKES

10" 16 GA. CAP., HAND  
8" 14 GA. CAP., HAND  
NEW 8" 16 GA. CAP., HAND  
NEW 8" 16 GA. CAP., HAND  
NO. 167, APRON, 3/4" AT 6" CAP., 1/2"  
AT 1"

### BAR FOLDERS

NEW NO. 63F PEXTO, 30" 22 GA.  
21" NIAGARA, 22 GA.  
NEW NO. 055D PEXTO, 36", 20 GA.

### WELDERS, SPOT

5 KVA-100 KVA NEW REX  
10 KVA REX, 18" thr., 220 volt.  
15 KVA REX, Foot operated, 18" thr., 220  
volt.  
NEW 50 KVA REX, AIR OPERATED, PRESS  
TYPE, 20" THR., 200 volt  
PRACT. NEW 50 KVA PROGRESSIVE, 54"  
THR., 220 VOLT  
175 KVA THOMPSON, 25 1/4" THR., 440  
VOLT  
75 & 100 KVA THOMSON: 12" throat, 440  
volt.

### ONI PRESSES

NO. 5 CONS., 43 ton, 4 1/2" str.  
NO. 5 1/2 WALSH, 3 1/4" shaft, 1 1/2" str.  
71 TON MOSSBERG & GRANVILLE, 2" str.,  
8" shaft ht.  
NO. 4 CONS., 31 1/2 Ton, 2 1/4" str., 8 1/2"  
shaft ht.  
NO. 21 BLISS, 31 1/2 Ton, 2 3/4" str.  
NO. 3 WALSH, 2 1/2" shaft, 2" str.  
NO. 5 1/2 NIAG., 3" shaft, 2 1/2" str.  
NO. C-13 FERR., 2 1/2" shaft, 2 3/4" str.



NO. 3 JOHNSON  
NO. 4 1/2 JOHNSON  
NO. 44 JOHNSON  
NO. 55 JOHNSON  
NO. 7 JOHNSON  
NO. 8-G JOHNSON

### PRESSES DOUBLE CRANK

NO. 152-B CLEVELAND, 56 Ton, 4" str.  
NO. 3-A BLISS B.G., 56 Ton, 5" str.  
NO. 3 1/2 TOLEDO, 43 Ton, 2" stroke  
NO. 4 WEST B.G., 71 Ton, 3 1/2" str.

Our "BLUE BOOK" Lists and illustrates all Types of Metal Working Machinery. SEND FOR YOUR FREE COPY TODAY.  
Write-Wire-or phone YArds 7-5800 Eastern Office-2825 N. Broad St., Philadelphia 32, Penna. Phone Baldwin 9-5932

## INTERSTATE Machinery Co., Inc.

1433 W. PERSHING RD., CHICAGO 9, ILL.

What Happened to That  
Pint of Blood YOU  
Were Going to Give  
?????



WEAR A  
V. F. W.  
"Buddy"  
Poppy  
MEMORIAL DAY

### ADJUSTABLE ELBOWS

Registers and Grilles  
Deliveries from Stock

Juniper Elbow Co. Inc.

72-15 Metropolitan Ave.  
Middle Village, L.I., N.Y.



### FOLDING BRAKES

Form angles, flanges  
and Pittsburgh locks.  
26 gauge steel. Cam  
locking. Can be  
bolted to bench, or  
edge of truck. All  
steel, reinforced.  
Shipped Express  
Collect, 30" size,  
Wt., 54 lbs.,  
\$26.50, 36" Wt.,  
66 lbs., \$31.00; 48", 100 lbs., \$45.00. Floor  
mountings, 52" high, \$7.00 extra. Order direct,  
cash, or C.O.D., or send for folder.

VVKE BRAKE CO.

T-1116 E. 27th St., Omaha 5, Nebraska



PLEASE GIVE GENEROUSLY  
1952 RED CROSS FUND

### RUBBER LADDER SHOES

for safe climbing  
\$2.95 per pair

JOHNSON  
LADDER SHOE CO.

Eau Claire, Wisconsin

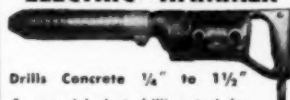


### WODACK "DO-ALL" ELECTRIC HAMMER

Drills Concrete 1/4" to 1 1/2"

A powerful, fast drilling tool for  
contractors and maintenance de-  
partments. Separate the two members  
and it's a heavy duty 1/2" electric drill.  
TWO TOOLS IN ONE. Six drills in 20  
diameters and 20 other hammer tools for  
chipping, grooving, etc. Saves man hours.  
Speeds up work - 12 to 15 times faster  
than with hand tools.

Ask for the New Bulletin 510-AA  
Wodack Electric Tool Corp.  
4627 W. Huron St. Chicago 44, Ill.



## INDEX TO ADVERTISERS

A. Register Co., The	1	Gerelt Corp., The	167	Quiet Automatic Burner Corp.	171
A. J. Mfg. Co.	143	GlassBloss Corp., The	31	Quincy Stove Mfg. Co.	7
A. P. Controls Corp.	103	Gray and Dudley Co.	129	R C S Tool Sales Corp.	7
Adams Co., The	172	Gray Metal Products, Inc.	129	Radian	128
Adelphi Mfg. Co., Inc.	155			Ramsey Fasteners, Inc.	133
Aerofin Corp.	163	Hall-Neal Furnace Co.	97	Randall Graphite Bearings, Inc.	133
Aerofin Bearing Co.	*	Hall's Safe Co., The, Quickdraft Div.	*	Reinhard Bros. Co.	133
Air Controls, Inc.	139	Hamminger Radiator Engrg. Co.	156	Research Products Corp.	Outside Back Cover
Air Control Prod., Inc.	Inside Front Cover	Hart & Cooler Mfg. Co.	167	Revere Copper & Brass, Inc.	59
Air Filter Corp.	*	Heil Company	121	Rez Roto Corp.	*
Air-Maze Corp.	*	Henderson Furnace & Mfg. Co.	24	Rexnor Manufacturing Corp.	133
Airtemp Div. of Chrysler Corp.	161	Henry Furnace Co., The	145	Rheem Steel Co.	21
Air-Flex Furnace Fitting Co.	172	Hess Co., The	162	Richmond Radiator Co.	166
Allen Co., Inc., L. B.	158	Hess-Snyder Co.	162	Rigidized Metals Corp.	135
Alton Mfg. Co.	137	HomeEase Products Div.	169	Roberts Mfg. Co., S. R.	164
Aluminum Co. of America	*	Hogge Electric Co., Inc.	115	Rockwell Mfg. Co.	164
American Air Filter Co., The	154	Home Owners Catalog	82	Rochester Register Co.	164
American Brass Co.	76 & 77	Hussey & Co., C. G.	127	Ryerston & Son, Inc., Joseph T.	164
American Machine Products	33		106	Sail Mountain Co.	146
American Radiator & Standard Sanitary Corp.	155	Illinois Iron & Bolt Co.	106	San Angelo Foundry & Machine Co.	110
Anchord Div., Stratton & Testegee Co.	143	Illinois Testing Laboratories, Inc.	133	Schaeter Brush Mfg. Co.	135
Anchor Post Products, Inc.	151	Independent Pneumatic Tool Co.	133	Security Mfg. Co.	140
Anemostat Corp. of America	155	Independent Register Co.	123	Sequoia Mfg. Co.	136
Armco Steel Corp.	151	Ingersoll Products Div., Borg-Warner Corp.	14 & 15	Skutt Mfg. Co.	114
Armstrong Co., The	143	Ingersoll Steel Div., Borg-Warner Corp.	119	Smith, R. E.	135
Armstrong Furnace Co.	151	Inland Steel Products Co.	119	Standard Stamping & Perforating Co.	135
Atlas Mfg. Co.	141	International Heater Co.	*	Stanley Electric Tool Div.	159
Auer Register Co.	141	International Nickel Co., The	*	Steel City Furnace Corp.	31
Aurora Electric Corp., The	*	International Oil Burner Co.	*	Stefco Steel Co.	118
Automatic Burner Corp.	136		116	Stewart-Warner Corp.	135
Automatic Humidifier Co.	170	Jackson & Church Co.	171	Sullivan Valve & Engrg. Co.	159
Bacharach Industrial Instrument Co.	170	Johns-Manville Corp.	148	Sundstrand Engrg.	159
Barber Colman Co.	122	Johnson Gas Appliance Co.	79	Sundstrand Hydraulic Div., Sundstrand Machine Tool Co.	188
Barber Gas Burner Co., The	152	Johnson Gas S. T.	169	Sun-Ray Burner Mfg. Co.	55
Bayley Blower Co.	159	Kalamazoo Stove & Furnace Co., The	156	Surface Combustion Corp.	135
Berger Bros. Co.	161	Kaustine Co., Inc.	172	Swarzwout Co.	135
Berger Mfg. Co., Div. of Republic Steel Corp.	152	Kent Company, Inc., The	*	Synchromatic Corp.	135
Bethlehem Steel Co.	170	Kingston Convey. Div., Hoover Co.	172		135
Bett Max Manufacturing Co.	125	Kirk & Blum Mfg. Co.	165	Thatcher Furnace Co.	117
Beverly Shear Co.	152	Ko-Z-Aire, Inc.	8	Thermac Company	135
Bishop & Babcock Mfg. Co., Inc.	170	Kresno-Stamm Mfg. Co. (America) Inc.	160	Thompson & Co.	135
Black & Decker Mfg. Co.	125	Krueger Air Conditioning Co.	162	Thor Metal Prod. Co.	135
Boston Machine Works Co.	83	Krugersentry Gauge Co.	162	Thor Tool & Die Co.	109
Brauer Supply Co., A. G.	101		162	Titus Mfg. Corp.	135
Bremil Mfg. Co.	101	LaHarc Industries	162	Toridheat Div., Cleveland Steel Products Corp.	135
Bryant Heater	101	Lake Chemical Co.	171	Trade-Wind Motor Fans, Inc.	171
Buckeye Furnace Pipe Co.	101	Lau Blower Co.	167	Turner Brass Works, The	135
Burn-Rite Products Co., The	3	Libert Machine Co.	167	Tuttle & Bailey, Inc.	135
Carey Mfg. Co., Philip	101	Lima Register Company	167		135
Carrie Corp.	101	Little Giant Vaporizer Co.	166	Union States Register Co.	126
Century Electric Co.	101	Lockformer Co.	166	United States Steel Co.	81
Century Engineering Corp.	3	Lustrick, Inc.	166	United States Steel Supply Co.	27
Certified Furnace Co.	Inside Back Cover	Maid-O-Mist, Inc.	160	Utility Appliance Corp.	130
Champion Bronze Powder & Paint Co.	85	Majestic Co.	171		130
Char-Gale Mfg. Co.	145	Marshalltown Mfg. Co.	167	Vank Pack Corp.	65
Chase Brass & Copper Co.	74	Mellaway Corp.	171	Viking Air Conditioning Corp.	130
Chevrolet Motor Div., General Motors Corp.	161	Metricomatic Mfg. Co.	*	Viking Mfg. Co.	130
Cincinnati Elbow Co., The	120	Mercoid Corp., The	*		130
Clarge Fan Co.	156	Meyer & Bro. Co., F.	168	Walker Mfg. & Sales Corp.	66
Cleveland Humidifier Co.	99	Meyer Engineering Co.	168	Wallace Co., William	135
Cleveland Steel Products Co.	138	Mico Register Corp.	168	Walsh Refractories Corp.	170
Climatemaker Heat Loss Calculator Co.	23	Mid-America Steel Warehouse, Inc.	172	Ward Machinery Co.	170
Combustion Div., The Steel Products Engrg. Co.	78	Mid-Continent Metal Products Co.	170	Washington Steel Corp.	16 & 17
Comfort Products Corp.	160	Miller Company, The	172	Watermark Waterbury Co.	159
Condensation Engineering Corp.	23	Miller & Doing	170	Webster Elec. Co.	159
Connor Engrg. Co., W. B.	163	Miller Product Co.	170	Western Engrg. Co.	159
Corlett-Turner Co.	78	Milton Equipment Co.	22, 70 & 71	Wheeling Corrugating Co.	93
Crescent Tool Co.	29	Minnesota-Honeywell Regulator Co.	108	White-Rodgers Elec. Co.	135
Crise Controls Div., Acro Mfg. Co.	29	Morrison Products, Inc.	29	Whitney Mfg. Co., W. A.	138
		Morrison Steel Products, Inc.	73	Whitney Metal Tool Co.	163
Dahlstrom Machine Works	160	Mueller Furnace Co., L. J.	*	Wilder Mfg. Co.	*
De Hu Matic Air Conditioning Co.	61		*	Williams Corp.	112
Delco Appliance Div., General Motors Corp.	161	National Engineering & Mfg. Co.	149	Williams Heater Co.	91
Delco Products Div., General Motors Corp.	68	National Heater Co.	139	Wilson, Inc., Grant	135
Delta Heating Corp.	170	National Lock Company	161	Wilson, Inc., John	84
Detroit Lubricator Co.	167	National Metal Fabricators	67	Wise & Sons, Inc.	111
Diamond Mfg. Co.	161	National Supp. Service Co.	134	Wolff & Co., Benjamin	69
Dickman Co., Ferdinand	12	Niagara Machine & Tool Works	30	Wyssong & Miles Co.	153
Dodge Corp., The W.	172	Norge Heat Div., Borg Warner Corp.	63		
Doyle Vacuum Cleaner Co.	80	Norman Products Co., Inc.	12	XXth Century Htg. & Vent. Co.	166
Dravo Corp.	151	No-Way Corp.	*	Yates-American Machine Co.	166
Dreis & Krump Mfg. Co.	144		*	York Corrugating Co.	164
Dualtron Co., The	104	Ohio Valley Hardware & Roofing Co.	141	Youngstown Furnace Co.	172
Ducane Heating Corp.	150	Oil Heat Institute	131		172
	151	Oilux Co.	10	Zeh Co., Inc.	86
Elgo Shutter & Mfg. Co.	147	Olsen Mfg. Co., C. A.	147	Zink Co., John	172
Emerson Elec. Mfg. Co.	147	Oran Company, The	105		
Excelsior Steel Furnace Co.	149	Owens-Corning Fiberglas Corp.	147		
	149		10		
Fallsington Mfg. Co.	147	Packard Elec. Div., General Motors Corp.	147		
Federated Metals Division	147	Palmer Mfg. Corp.	131		
Field Control Div., H. D. Conkey & Co.	149	Parker-Kalon Corp.	10		
Firewel Co., Inc.	149	Patten Co., J. V.	147		
Follanshee Steel Corp.	149	Peck, Stow & Wilcox Co.	105		
Forest City Foundries Co., Inc.	149	Peerless Electric Co.	147		
	*	Penn Controls	124		
	*	Penn Ventilator Co.	85		
	*	Perfection Stove Co.	*		
	*	Petersen Mfg. Co.	*		
	*	Pioneer Furnace Co.	*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		
	*		*		

Firms represented in this issue are identified by the folio of the page on which their advertising appears. Advertising which appears in other issues is marked with an asterisk.

# "Bonus Built"

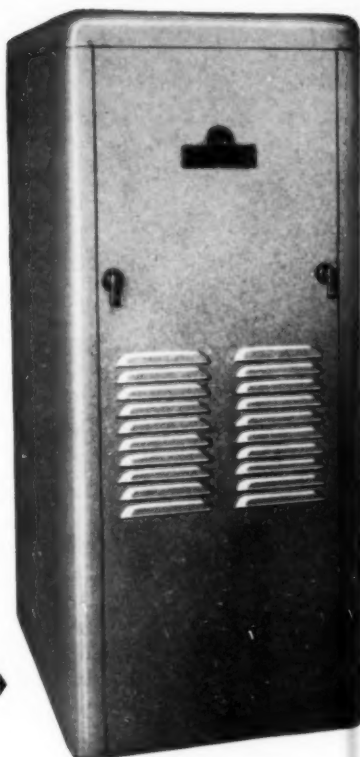
## EASIER TO SELL!

- **LOW COST** — Compete with any dealer in town for the big profits in low-cost units. And the CERTIFIED name means reliable quality — makes sales easier.
- **LOW FUEL BILLS** — Overall efficiency of "Bonus Built" oil furnaces ranges from 77% to 83% — exceptionally high, even compared with premium-priced competitive models. This is a particularly strong selling point in lower income brackets.
- **EXPANDABLE** — When the home is enlarged, blowers and motors on Lo-Boy units can be increased one size in capacity. This makes them ideal for young homeowners who hope to add more space without replacing the furnace — and increases your sales.
- **LUXURY FEATURES** — Here are the features people look for — compare them with competitively-priced oil furnaces:
  - Minneapolis Honeywell Time Modulated Thermostats supplied with all burners.
  - Fully insulated with aluminum foil and glass wool.
  - Large, efficient wrap-around radiator.
  - Efficient gun-type Certified burner.
  - Air filters easy to clean and replace.
  - Stainless steel combustion chamber for reliability, low fuel consumption.
  - Clean-outs on all radiators.
  - Concave heads avoid "pings" due to expansion and contraction.

*All models shipped fully assembled, ready to install.*



"Bonus Built"  
MODEL OHV  
Four Capacities



"Bonus Built"  
MODEL OLV

### A MODEL FOR EVERY MARKET

● Certified "Bonus Built" Oil Furnaces are built in 4 capacities, from 75,000 to 125,000 Btu's. They will efficiently heat from 4 to 7 rooms, depending on climate, house insulation, etc. Adaptable to all types of warm air heating, including perimeter heating.

These low-cost units are backed up by a full line of famous Certified furnaces ranging from 90,000 to 1,750,000 Btu's — oil, gas or coal fired. The full line gives you an edge on competition in every bracket.

FIND OUT HOW  
TO SELL MORE FURNACES  
WRITE TODAY FOR FULL DETAILS

*Certified*



A COMPLETE LINE OF WARM AIR HEATING EQUIPMENT  
OIL FIRING GAS FIRING COAL FIRING

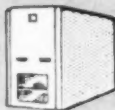
**CERTIFIED FURNACE CO.**

DIVISION OF STAINLESS & STEEL PRODUCTS CO.  
1000 Berry Avenue St. Paul 4, Minnesota

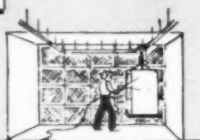


THERE'S AN **RP**  
*Air Filter for:*

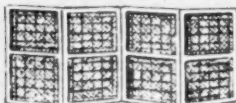
FORCED WARM  
AIR FURNACES



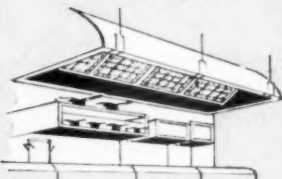
UNIT  
AIR CONDITIONERS



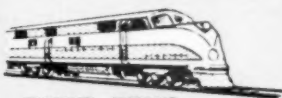
PAINT SPRAY BOOTH



CENTRAL SYSTEM  
FILTER BANKS



KITCHEN GREASE CANOPIES



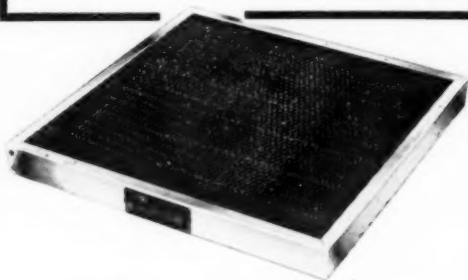
ENGINE INTAKE



SPECIAL  
PURPOSE  
DESIGNS

*Tell us your  
Air Filter  
needs and  
specifications*

*Peak Performance . . .*  
**AT EITHER HIGH  
OR LOW VELOCITIES**



**. . . R P Alumafoil Industrial  
*Air Filters***

Here's today's greatest air filter value . . . the R P Alumafoil Industrial Filter for forced air heating and air conditioning that provides super-efficiency for either high or low velocities in a single unit! Low cost, light weight, with increased depth loading, high dirt holding capacity and R P's exclusive non-clogging features. Check these figures:

350 F.P.M. Clean Resistance . . . . .055 in. of water  
520 F.P.M. Clean Resistance . . . . .11 in. of water

**EASILY WASHED**

These R P Multi-Velocity Filters are cleaned for re-use by simply flushing the dirty filter with a stream of water. This, plus a long service life, makes them the most economical of filters!

**FOR DUST REMOVAL OR  
DUST AND ODOR REMOVAL**

After flushing, filter can be made either dust removing or dust AND odor removing by re-coating with the correct R P adhesive designed to provide these properties.



*Write* **RESEARCH PRODUCTS CORP., Madison, Wis., U. S. A.**

**RP**

**. . . PRODUCTS OF RESEARCH**

WASHABLE AND REPLACEMENT AIR FILTERS • GREASE FILTERS  
EVAPORATIVE COOLER MATERIALS